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WATER SUPPLY OUTLOOK

FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

for

OREGON

UNITED STATES DEPARTMENT of AGRICULTURE...SOIL CONSERVATION SERVICE

and

OREGON STATE UNIVERSITY

and

STATE ENGINEER of OREGON

Data included in this report were obtained by the agencies named above in cooperation with other Federal, State and private organizations.

JUNE 1, 1963

UNITED STATES DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

To Recipients of Water Supply Outlook Reports:

The climate of the cultivated and populated areas of the West is characterized by relatively dry summer months. Such precipitation as occurs falls mostly in the winter and early spring months when it is of little immediate benefit to growing crops. Most of this precipitation falls as mountain snow which stays on the ground for months, melting later to sustain streamflow during the period of greatest demand during late spring and summer. Thus, nature provides in mountain snow an imposing water storage facility.

The amount of water stored in mountain snow varies from place to place as well as from year to year and accordingly, so does the runoff of the streams. The best seasonal management of variable western water supplies results from advance estimates of the streamflow.

A snow survey consists of a series of about ten samples taken with specially designed snow sampling equipment along a permanently marked line, up to 1000 feet in length, called a snow course. The use of snow sampling equipment provides snow depth and water equivalent values for each sampling point. The average of these values is reported as the snow survey measurement for a snow course.

Snow surveys are made monthly or semi-monthly beginning in January or February and continue through the snow season until April, May or June. Currently more than 1400 western snow courses are measured each year. These measurements furnish the key data for water supply forecasts.

Streamflow forecasts are obtained by a comparison of total or maximum snow accumulation, as measured by snow water equivalent, to the subsequent spring and summer or snowmelt season runoff over a period of years. The snow water equivalent measured in selected snow courses provides most of the index to the streamflow forecast for the following season. More accurate forecasts are usually obtained when other factors such as soil moisture, base flow and spring precipitation are considered and included in the forecast procedure. Early season forecasts assume average climatic conditions through the snowmelt season.

Listed below are the Federal-State-Private Cooperative Snow Survey and Water Supply Forecast reports available for the West which contain detailed information on snow survey measurements, streamflow forecasts, reservoir storage, soil moisture and other guide data to water management and conservation decisions. Soil Conservation Service Reports may be secured from Water Supply Forecasting Unit, Soil Conservation Service, P.O. Box 4170, Portland 8, Oregon.

PUBLISHED BY SOIL CONSERVATION SERVICE

	PUBLISHED BY SOIL COM	ISERVATION SERVICE	
REPORTS	ISSUED	LOCATION	COOPERATING WITH
RIVER BASINS			
WESTERN UNITED STATES	MONTHLY (FEBMAY) POP	RTLAND, OREGON	ALL COOPERATORS
STATES			
ALASKA	MONTHLY (MAR MAY) PAL	MER, ALASKA	ALASKA S.C.D.
	SEMI-MONTHLY PHO		SALT R. VALLEY WATER USERS ASSOC. ARIZ. AGR. EXP. STATION
COLORADO AND NEW MEXICO	MONTHLY (FEBMAY) FOR	RT COLLINS, COLORADO	COLO. STATE UNIVERSITY COLO. STATE ENGINEER N. MEX. STATE ENGINEER
IDAHO.	MONTHLY (JANJUNE) BO	ISE, IDAHO	IDAHO STATE RECLAMATION ENGINEER
MONTANA	MONTHLY (JANJUNE) BO	ZEMAN. MONTANA	MONT. AGR. EXP. STATION
NEVADA	.Monthly (JanMay)REN	NO. NEVADA	NEVADA DEPT. OF CONSERVATION AND NATURAL RESOURCES - DIVISION OF WATER RESOURCES
ORE GON	.MONTHLY (JANJUNE) — POF	RTLAND, OREGON	OREG. STATE UNIVERSITY OREGON STATE ENGINEER
UTAH	MONTHLY (JAN JUNE) SAL	T LAKE CITY, UTAH	UTAH STATE ENGINEER
WASHINGTON-	. MONTHLY (FEB JUNE) - SPO	OKANE, WASHINGTON	WN. STATE DEPT. OF CONSERVATION
WYOMING	. MONTHLY (FEB JUNE) CAS	SPER, WYOMING	WYOMING STATE ENGINEER
	PUBLISHED BY OT	HER AGENCIES	
REPORTS	ISSUED		AGENCY
BRITISH COLUMBIA	MONTHLY (FEBJUNE)	WATER RIGHTS BR. NATURAL RESOURCES B.C., CANADA	, DEPT. OF LANDS, FORESTS AND , PARLIAMENT BLDG., VICTORIA,
CALIFORNIA		CALIF. DEPT. OF W SACRAMENTO, CALIF	VATER RESOURCES, P.O. BOX 388,

WATER SUPPLY OUTLOOK

FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

for

OREGON

ISSUED

JUNE 8, 1963

Report prepared by

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and

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Issued by

THOMAS P. HELSETH

STATE CONSERVATION IST
SOIL CONSERVATION SERVICE

F. EARL PRICE

DIRECTOR

OREGON AGRICULTURAL

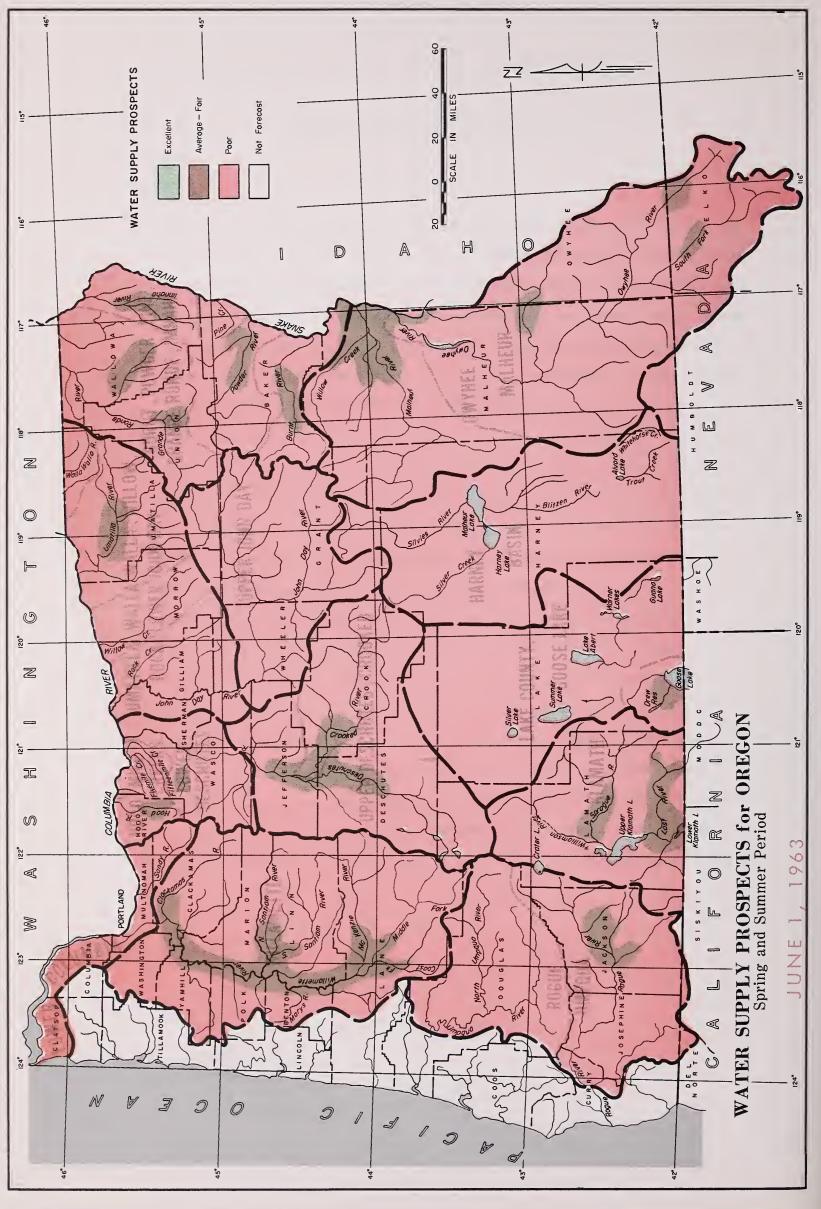
EXPERIMENT STATION

CHRIS L. WHEELER
STATE ENGINEER
STATE OF OREGON



TABLE OF CONTENTS

PAGE
WATER SUPPLY PROSPECTS FOR OREGON(MAP)FACING PAGE 1
WATER SUPPLY OUTLOOK FOR OREGON
STORAGE STATUS OF OREGON RESERVOIRS (MAP)
MOUNTAIN SOIL MOISTURE IN OREGON (MAP) 4
VALLEY PRECIPITATION IN OREGON (MAP AND TABLE) 5
CURRENT OREGON STREAMFLOW
DETAILED WATER SUPPLY OUTLOOK BY MAJOR WATERSHED AREAS
OWYHEE, MALHEURAREA 1
BURNT, POWDER, PINE, GRANDE RONDE, IMNAHAAREA 2
UMATILLA, WALLA WALLA, WILLOW, ROCK, LOWER JOHN DAYAREA 3
UPPER JOHN DAYAREA 4
UPPER DESCHUTES, CROOKEDAREA 5
HOOD, MILE CREEKS, LOWER DESCHUTESAREA 6
LOWER COLUMBIAAREA 7
WILLAMETTEAREA 8
ROQUE, UMPQUAAREA 9
KLAMATHAREA 10
LAKE COUNTY, GOOSE LAKEAREA 11
HARNEY BASINAREA 12
PREVIOUSLY UNPUBLISHED AND ERRATA SNOW DATAAPPENDIX
MAP AND INDEX OF OREGON SNOW COURSES (MAP)
LIST OF COOPERATORS



WATER SUPPLY OUTLOOK for OREGON

JUNE 1, 1963

Oregon's 1963 water supply outlook has changed greatly this year from a gloomy mid-winter prospect to a currently satisfactory situation for most lands served from stored water supplies. However, thousands of acres of land depending on natural flow of streams will have severe late season shortages unless unexpected rains fall at opportune times.

The improvement in water supply outlook began about March 29 with the beginning of heavy precipitation over much of the state. Frequent and abnormally heavy storms continued to add moisture until about mid-May. Most of this moisture came as rain with snowfall confined mostly to high mountain watersheds.

SNOW COVER

Most of the scanty mountain snowpack has melted off in the abnormally warm weather which began about mid-May. Remaining snow cover is found only at the highest elevations and is far below the average.

SOIL MOISTURE

Moisture in the soil-mantle of the upper watersheds is holding up much better than usual. These wet conditions will favor good runoff from each contributing storm and from the remaining snowpack. Wet soils are preventing normal agricultural operations in Harney and Lake counties.

RESERVOIR STORAGE

Water stored in 20 major irrigation reservoirs is 89 percent of the 15 year average (1943–57) and 108 percent of last year on June 1. Stored water is adequate for most needs except for lands served from McKay Reservoir in Umatilla county and Agency Valley and Warmsprings Reservoirs in Malheur county, where water supplies are barely sufficient for an average season.

STREAMFLOW

Preliminary figures of streamflow* for May vary from 44 percent of the 15 year average (1943–57) on the Owyhee to 223 percent average on the Umpqua.

Forecasts of expected streamflow, May through September, vary from 39 percent of average on the Owyhee or 83,000 acre feet to 105 percent on the Sprague near Chiloquin or 200,000 acre feet.

All forecasts assume average precipitation and temperature during the runoff period.

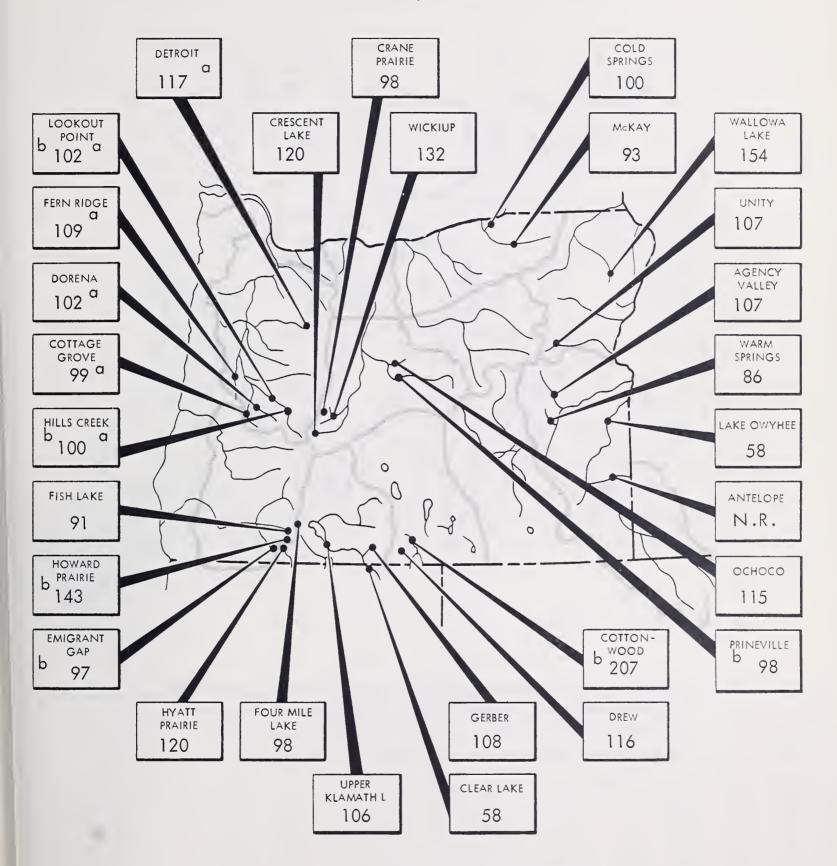
The next report on water supply conditions in Oregon will be issued at the close of the irrigation season early in October.

* Preliminary data furnished by U. S. Geological Survey, Portland, Oregon and the Owyhee Project, Nyssa, Oregon.



STORAGE STATUS of OREGON RESERVOIRS as percent of 1943-57, 15 year average

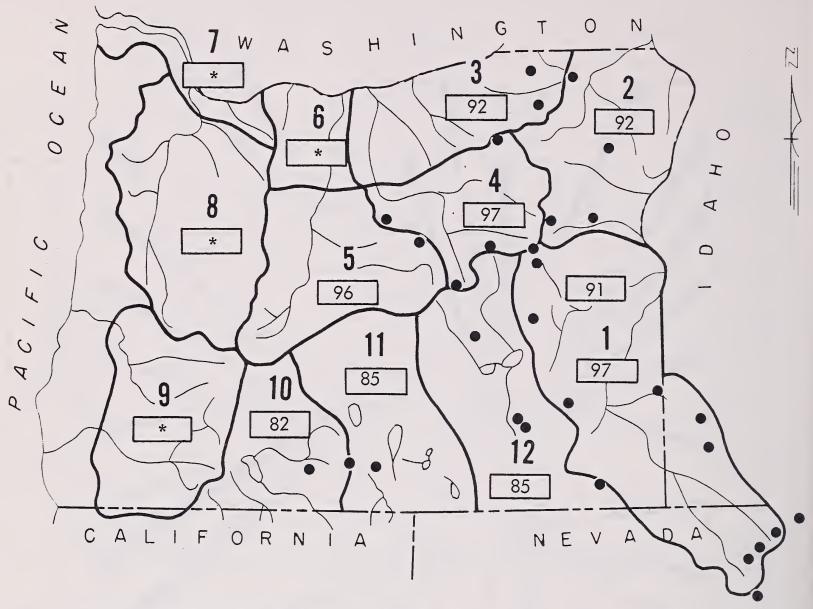
JUNE 1, 1963



- (a) Multiple purpose reservoir space reserved primarily for flood runoff.
- (b) Short record compared with last year on this date.
 N.R. No report.

MOUNTAIN SOIL MOISTURE in OREGON as percent of capacity

JUNE 1, 1963



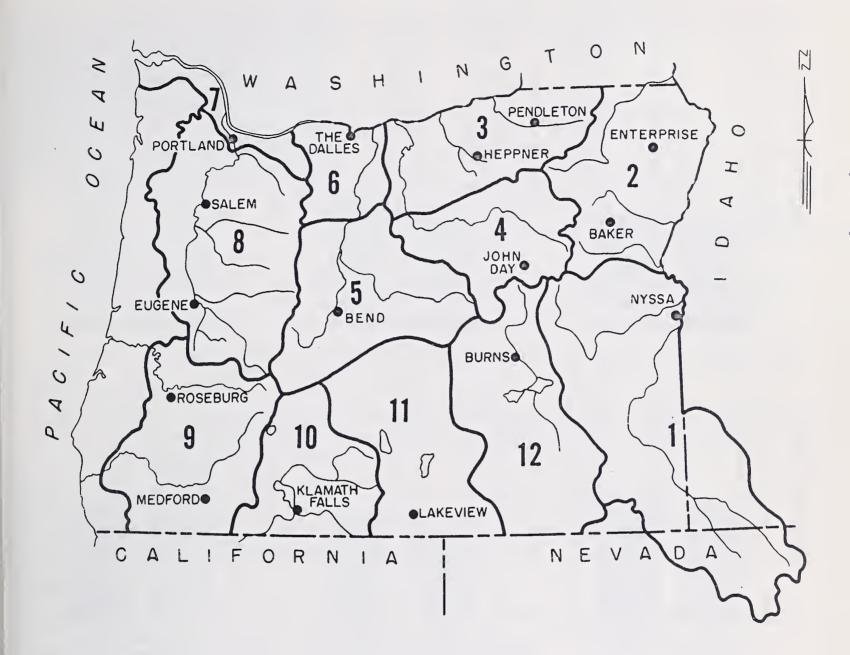
Soil Moisture Station

*Moisture studies not yet developed in these areas.

Note: The soil moisture figures published herein are not comparable to those published last year and earlier due to a change in the scale of evaluation. The new figures represent total moisture in the soil rather than moisture available to plants.

VALLEY PRECIPITATION in OREGON a

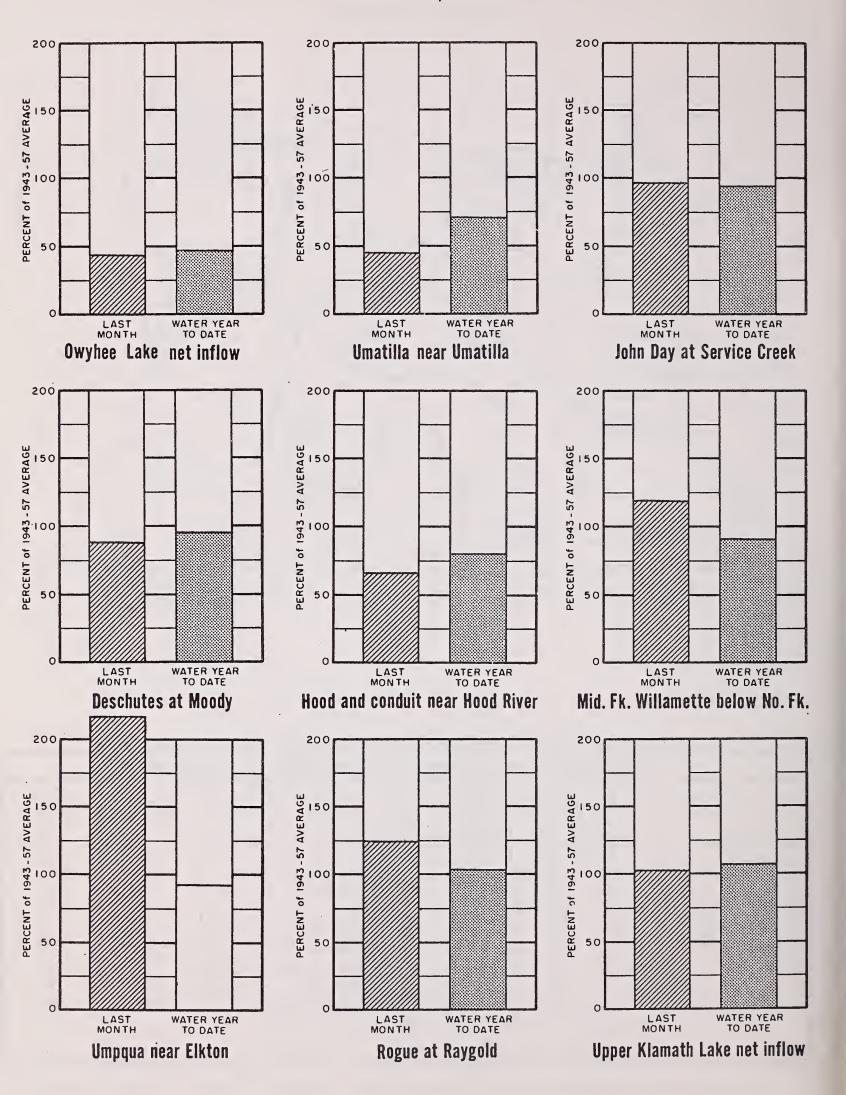
JUNE 1, 1963



PRE	CIPITATION	as PERCE	NT of the 1943 - 57 AV	ERAGE	
STATION	LAST MONTH	WATER b YEAR TO DATE	STATION	L A S T MON TH	WATER b YEAR TO DATE
BAKER BEND BURNS ENTERPRISE EUGENE APT HEPPNER JOHN DAY KLAMATH FALLS	76 105 214 84 217 96 89 65	109 105 153 103 105 124 131 100	LAKEVIEW MEDFORD APT. NYSSA PENDLETON APT. PORTLAND APT. ROSEBURG APT. SALEM APT. THE DALLES	194 150 66 48 142 212 193 63	159 135 111 99 94 99 97 90

CURRENT OREGON STREAMFLOW

JUNE 1, 1963





WATER SUPPLY OUTLOOK OWYHEE, MALHEUR WATERSHEDS

OREGON

as of JUNE 1, 1963

U. S. D. A. SOIL CONSERVATION SERVICE OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER

GENERAL OUTLOOK

The 1963 water supply outlook in Malheur county has changed greatly this year from an extremely gloomy mid-winter prospect to a reasonably satisfactory situation for most lands served from stored water supplies. Severe late season shortages are definitely expected for lands dependent upon natural streamflow.

SNOW COVER

Mountain snowcover melted rapidly, except at the extremely high elevations, when mid-May temperatures became excessively warm. Very little snow remains in the mountains as of this date.

SOIL MOISTURE

Upper watershed soils, close to the point of saturation, have assisted considerably in boosting the runoff from snowmelt and rainfall.

RESERVOIR STORAGE

Water stored in Lake Owyhee now totals 348,200 acre feet compared with 404,200 a.f. one year ago on June 1st. With careful use this supply, coupled with pumped water, should satisfy the 4 foot allotment to irrigators.

Stored water in Warmsprings and Agency Valley reservoirs has increased very well during May and now totals 175,000 acre feet compared with 133,000 a.f. one year ago. This supply should bolster the plan to allot 2.4 feet to each irrigated acre in the Vale-Oregon and Warmsprings Irrigation Districts.

No reports are available on either Antelope or Malheur Lake reservoirs.

STREAMFLOW

Runoff during the month of May has been only 44 percent of the 15 year average (1943–57) on the Owyhee River according to the North Board of Control at Nyssa.

Forecasts of streamflow have been raised with the Owyhee expected to produce 83,000 acre feet or 39 percent of average for the May-September period.

The Malheur at Drewsey is forecast to flow 30,000 acre feet or 83 percent average May-September. The North Fork is forecast at 32,000 a.f. or 84 percent average for the same period.

The next report on water supply conditions in Malheur county will be issued at the close of the irrigation season in early October.

WATER SUPPLY OUTLOOK expressed os "Poor", "Foir" "Average" or "Excellent"

RESERVOIR STORAGE (1,000 Ac. Ft.) June 1, 1963

CTDSAM - ADSA	FLOW PERIOD		RESERVOIR		MEASUR	ED (First o	f Month)
STREAM or AREA	SPRING SEASON	LATE SEASON	RESERVOIR	CAPACITY	THIS YEAR	LAST YEAR	1943 - 5
Boulder Creek Bully Creek Cow Creek Jordan Creek Jordan Valley Irrig. Dist. McDermitt Creek Oregon Canyon Creek Owyhee Project Succor Creek Tenmile Creek Vale Oregon Irrig. Dist. Warmsprings Irrig. Dist. Willow Creek (Reservoired)	Fair Fair Fair Average Fair Average Fair Average Fair Average Average Average	Poor Poor Poor Fair Poor Average Poor Poor Fair Fair Fair	Agency Valley Antelope Owyhee Warmsprings	60.0 55.0 715.0 191.0	57.5 f 348.2 117.5	44.9 45.1 404.2 88.1	53.3

STREAMFLOW FORECASTS a (1,000 Ac. Ft.) as of June 1, 1963

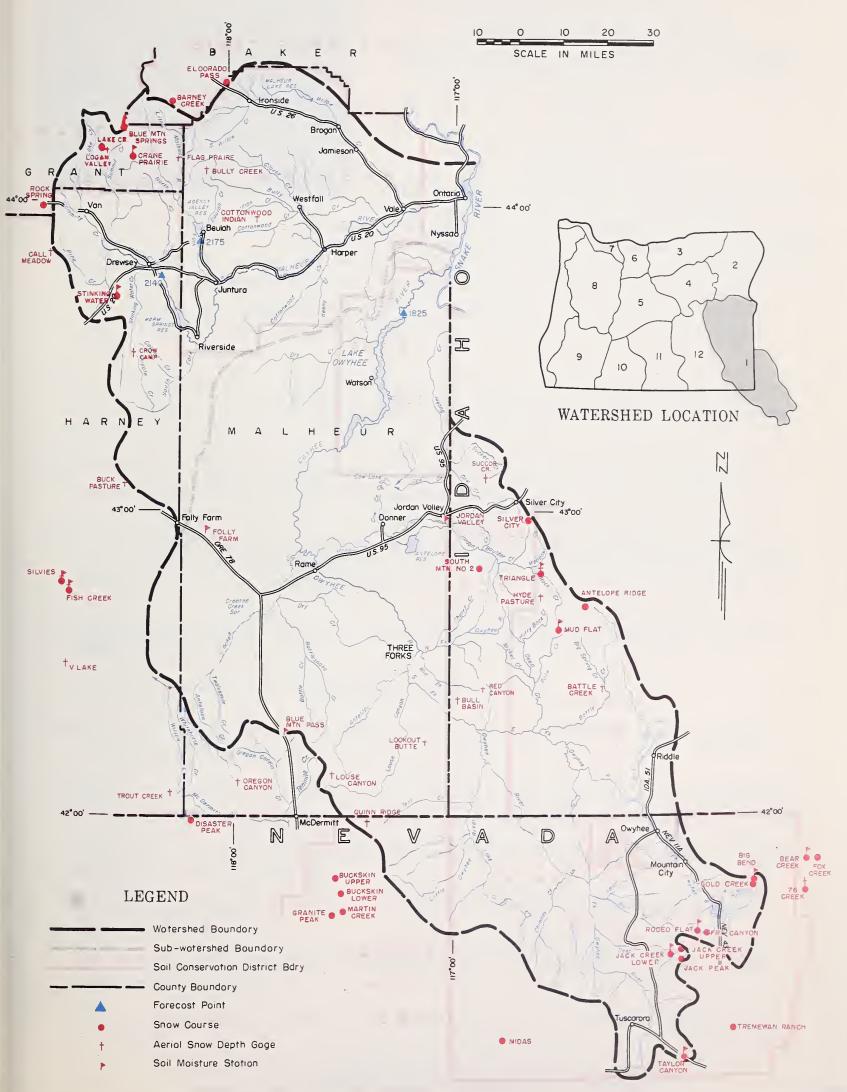
NO.	FORECAST POINT	FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE
2140	Malheur near Drewsey	30	May-Sept.	36	83
		29	May-July	35	83
2175	Malheur, North Fork at Beulah d	32	May-Sept.	38	84
1825	Owyhee Reservoir net Inflow g	83	May-Sept.	214	39
		78	May-July	196	40
					-

SOIL MOISTURE			(Inches)	SOIL MOISTURE (Inches)			
STATION		DEPTH	CAPACITY	DATE	THIS	LAST	2 YEARS
NAME	ELEVATION	DEFIN	CAPACITI	מאוב	YEAR	YEAR	AGO
Bear Creek (Nev.)	7800	72	16.9	4-1-63	7.81	9.6	8.6
Big Bend (Nev.)	6700	48	16.7	4-30-63	16.1 ¹	16.5	16.3
Blue Mountain Springs	5900	42	16.9	5-27-63	14.3	13.8	13.4
Crane Prairie	5375	48	18.2	5-27-63	17.5	17.7	17.6
Folly Farm	4450	30	12.5	3-28-63	9.9 ⁱ	11.6	
Jack Creek, Lower (Nev.)	6800	48	8.7	4-29-63	8.6 i	8.6	8.5
Jordan Valley	4250	48	19.3	3-27-63	16.7 ⁱ		
Mud Flat (Ida.)	5500	48	12.8	4-2-63	10.5	8.5	9.7
Rodeo Falt (Nev.)	6800	42	11.0	4-30-63	10.9 i	11.0	11.0
Stinking Water	4800	48	21.9	3-28-63	21.5^{i}	21.9	
Taylor Canyon (Nev.)	6200	48	15.1	4-29-63	14.2 i	14.9	13.8
Triangle (Ida.)	5150	48	16.2	4-2-63	14.4 i		

NOTE: The soil moisture figures published herein are <u>not</u> comparable to those published last year and earlier due to a change in the scale of evaluation. The new figures represent total moisture in the soil rather than moisture available to plants.

⁽a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) USBR records of inflow. (h) Not surveyed. (i) Nearest current data. (j) Partly estimated. (*) 1943-57 Adjusted average. (**) Average for 5 or more years in base period.

OWYHEE, MALHEUR WATERSHEDS





WATER SUPPLY OUTLOOK BURNT, POWDER, PINE, GRANDE RONDE, IMNAHA WATERSHEDS OREGON

*as of*JUNE 1, 1963

U. S. D. A. SOIL CONSERVATION SERVICE OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER

GENERAL OUTLOOK - The 1963 water supply outlook in Baker, Union, and Wallowa counties has changed greatly this year, from extremely gloomy at mid-winter, to near average for lands served by reservoir stored water. Late season shortages are expected however for lands depending on natural flow of smaller streams in the area.

SNOW COVER - Mountain snow cover has melted at all except the highest elevations.

Warm mid-May temperatures and rainfall very rapidly removed snow, which fell late in the season.

SOIL MOISTURE - Upper watershed soils, close to the saturation point, have greatly assisted in boosting the runoff from snowmelt and rainfall.

RESERVOIR STORAGE - Unity Reservoir received better than expected inflow during May and now holds 24,200 acre feet compared to 21,800 a.f. at this time last year. The average for June 1 is 22,600 acre feet.

Wallowa Lake now has 38,700 acre feet compared with 20,900 last year. The June 1 average is 25,200 acre feet.

No report was received on Thief Valley Reservoir.

STREAMFLOW - Runoff was much better than expected in May and streamflow forecasts were raised accordingly.

Burnt River is expected to flow 11,500 acre feet or 60 percent of the May-September average. Powder River is now forecasted at 77 percent of average or 34,000 acre feet.

Catherine Creek and the Grande Ronde are forecasted at 68 and 67 percent or 39,000 and 78,000 acre feet respectively.

The Wallowa East Fork is forecast at 88 percent or 10,600 acre feet for the April-September period.

The Imnaha is expected to flow 250,000 acre feet or 80 percent of average for the April-September period.

The next water supply outlook will be issued at the end of the irrigation season early in October.

WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

RESERVOIR STORAGE (1,000 Ac. Ft.) June 1, 1963

STREAM or AREA	FLOW	PERIOD
STREAM OF AREA	SPRING SEASON	LATE SEASON
Alder Slope	Fair	Fair
Baker Valley	Fair	Poor
Big Creek	Fair	Poor
Clover Creek (nr. N. Powder)	Fair	Poor
Cove	Fair	Poor
Durkee	Fair	Poor
Eagle Valley	Fair	Poor
Elgin	Fair	Poor
Enterprise-Joseph	Average	Fair
Hereford-Bridgeport	Average	Fair
Imnaha River	Average	Fair
LaGrande-Island City	Fair	Poor
Lostine-Wallowa	Average	Fair
No. Powder RWolf Cr.	Fair	Poor
Pine Valley	Fair	Poor
Powder River-Elk Creek	Fair	Poor
Summerville	Fair	Poor
Sumpter Valley	Fair	Poor
Union-Hot Lake	Fair	Fair
Unity	Fair	Poor

RESERVOIR	USABLE CAPACITY	MEASURED (First of Month THIS YEAR LAST YEAR AVERAG			
Unity Wallowa Lake	25.2 37.5	24.2 38.7	21.8 20.9	22.6 25.2	

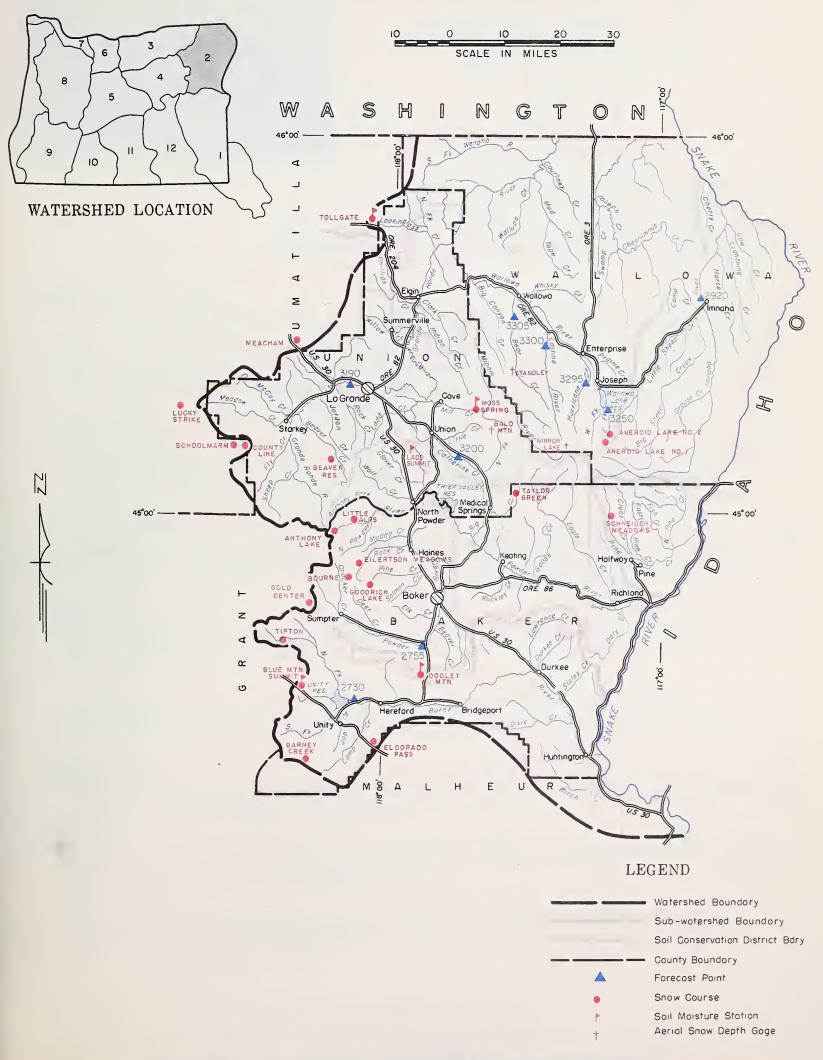
STREAMFLOW FORECASTS (1,000 Ac. Ft.) as of June 1, 1963

NO.	FORECAST POINT	FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE
3305 2730 3200 3190 3295 2920 3300 2755 3250	Bear near Wallowa Burnt near Hereford ^d Catherine near Union Grande Ronde at La Grande Hurricane near Joseph Imnaha at Imnaha Lostine near Lostine Powder near Baker Wallowa, East Fork near Joseph ^d	64 11.5 11.0 39 80 78 40 250 116 34 33 10.6 8.5	April-Sept. May-Sept. May-June May-Sept. May-Sept. May-July April-Sept. April-Sept. April-Sept. May-July April-Sept. May-July April-July April-July	74 19 15 57 119 116 49 314 133 44 43 12.1 9.7	86 60 73 68 67 67 82 80 87 77 77 88 88

OIL MOISTURE		PROFILE	(Inches)	SOIL MOISTURE (Inches)				
STATION		DEPTH	CAPACITY	DATE	THIS	LAST	2 YEARS	
NAME	ELEVATION	DEFIN	CAFACITI	DATE	YEAR	YEAR	AGO	
Blue Mountain Summit Emigrant Springs Tollgate	5100 3925 5070	36 48 48	16.8 22.3 22.2	4-30-63 4-26-63 4-29-63	15.6 i 20.8 i 20.1 i	11.4 21.5 20.0	16.1 21.8 20.5	
NOTE: The soil moisture figures published herein are <u>not</u> comparable to those published last year and earlier due to a change in the scale of evaluation. The new figures represent total moisture in the soil rather than moisture available to plants.								

⁽a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) Water content partly estimated. (h) Not surveyed. (i) Nearest current data. (j) Partly estimated. (*) 1943-57 Adjusted averages.

BURNT, POWDER, PINE, GRANDE RONDE, IMNAHA WATERSHEDS



Burnt, Powder, Pine, Grande Ronde, Imnaha Watersheds



WATER SUPPLY OUTLOOK UMATILLA, WALLA WALLA, WILLOW, ROCK, LOWER JOHN DAY WATERSHEDS

OREGON

as of JUNE 1, 1963

U. S. D. A. SOIL CONSERVATION SERVICE OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER

GENERAL OUTLOOK

The 1963 water supply outlook in Umatilla, Morrow and Gilliam counties has changed greatly this year from an extremely gloomy mid-winter prospect to a reasonably satisfactory situation for most lands served from stored water supplies. Severe late season shortages are foreseen for lands dependent upon natural streamflow.

SNOW COVER

A few abnormally warm days about mid-May removed all but a few patches of snow in the higher mountains. This year's "short" snowpack disappeared very rapidly.

SOIL MOISTURE

Moisture in the soil-mantle on the upper watersheds has been close to saturation. These wet soils have greatly assisted in the runoff from rains and from the light snowpack.

RESERVOIR STORAGE

Cold Springs Reservoir has 46,300 acre feet of water ready for use compared with 50,000 acre feet at this date last year.

McKay Reservoir has 63,500 acre feet in storage compared with 55,400 a.f. one year ago. These supplies will be adequate only if careful use is made of the water.

STREAMFLOW

Flow of the Umatilla near Umatilla* has been 46 percent of the May average and only 71 percent of the October-May average.

Forecast of flow of the <u>Umatilla at Pendleton</u> for the May-September period is 55,000 acre feet or 56 percent of average.

The South Fork of the Walla Walla is forecast at 37,000 acre feet or 64 percent of average May through September.

Butter Creek has been having a strong flow and is now forecast to produce 5,500 acre feet May through September or 112 percent of average.

The next report on water supply conditions in the Umatilla-Walla area will be issued at the close of the irrigation season early in October.

* Preliminary data from U. S. Geological Survey, Portland, Oregon.

WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

RESERVOIR STORAGE (1,000 Ac. Ft.) June 1, 1963

STREAM or AREA	FLOW PERIOD		PECERVOIR	USABLE	MEASUR	ED (First o	f M
SIREAM OF AREA	SPRING SEASON	LATE SEASON	RESERVOIR	CAPACITY	THIS YEAR	LAST YEAR	194 AVE
Birch Creek	Average	Poor	Cold Springs	50.0	46.3	50.0	4
Butter Creek	Average	Poor	McKay	73.8	63.5	55.4	6
Dry Creek	Fair	Poor					
Dugger Creek	Fair	Poor					
Johnson Creek	Fair	Poor					
McKay Creek	Fair	Poor					
Mill Creek	Fair	Poor					
Mud Creek	Fair	Poor					
Pine Creek	Fair	Poor					
Rhea Creek	Fair	Poor					
Rock Creek	Fair	Poor					
Umatilla R. (Cold Spgs.Res.)	Average	Fair					
Umatilla River, Main	Fair	Poor					
Umatilla River (McKay Res.)	Average	Fair					
Walla Walla River, Little	Fair	Poor					
Walla Walla River, Main	Fair	Poor					
Walla Walla River, N. Fork	Fair	Poor					
Walla Walla River, S. Fork	Fair	Poor					
Willow Creek	Fair	Poor					

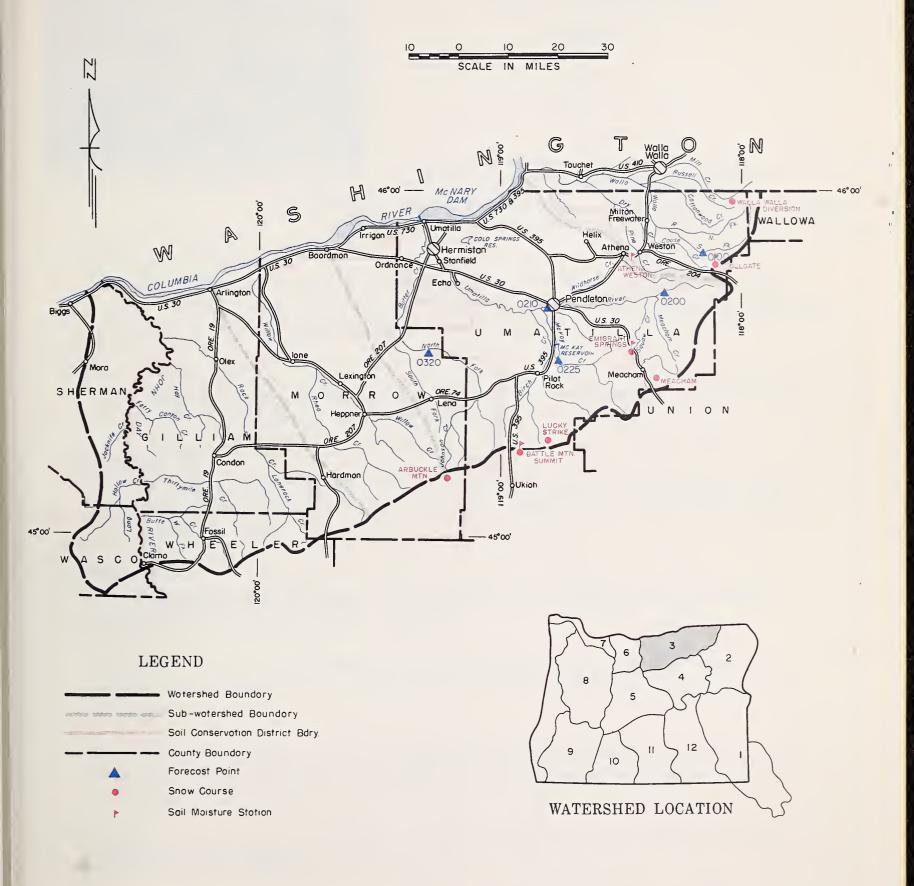
STREAMFLOW FORECASTS a (1,000 Ac. Ft.) as of June 1, 1963

NO.	FORECAST POINT	FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE
0320	Butter Creek near Pine City	5.5	May-Sept.	4.9	112
0225	McKay near Pilot Rock	9.5	May-July	13.5	70
0200	Umatilla near Gibbon	35	May-Sept.	5 9	59
0210	Umatilla at Pendleton	55	May-Sept.	99	56
		53	May-July	94	56
0100	Walla Walla, South Fork near Milton	37	May-Sept.	58	64
		29	May-July	44	65

OIL MOISTURE	MOISTURE		PROFILE (Inches) SOIL MOISTURE (Inches)				
STATION		DEPTH	CAPACITY	DATE	THIS	LAST	2 YEARS
NAME	ELEVATION	JEI III	CAPACITY	JATE	YEAR	YEAR	AGO
Athena-Weston Battle Mountain Summit Emigrant Springs Tollgate	1700 4340 3925 5070	48 48 48 48	18.7 13.8 22.3 22.2	4-29-63 4-25-63 4-26-63 4-29-63	15.9 ^g 13.8 ^g 20.8 ^g 20.1 ^g	15.5 13.2 21.5 20.0	16.2 13.0 21.8 20.5
NOTE: The soil moisture figure year and earlier due total moisture in the	to a change	in the so r than moi	ale of eva sture avai	luation. The	ne new fig lants.		

⁽a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) Nearest current data. (h) Partly estimated. (*) 1943-57 adjusted average. (**) Average for 5 or more years in base period.

UMATILLA, WALLA WALLA, WILLOW, ROCK, LOWER JOHN DAY WATERSHEDS



Umatilla, Walla Walla, Willow, Rock, Lower John Day Watersheds



WATER SUPPLY OUTLOOK UPPER JOHN DAY WATERSHEDS OREGON

as of JUNE 1, 1963

U.S.D.A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER

GENERAL OUTLOOK

The 1963 water supply outlook for the Upper John Day area continually improved since a "gloomy" early April outlook. Late season water shortages are still expected however, unless timely rains continue to fall during the season.

SNOW COVER

The "short" snowpack has been removed from all but the highest and most protected areas by a few abnormally warm days in early May.

SOIL MOISTURE

Soil moisture is holding up better than average due to above normal spring rainfall over most of the watershed and will continue to produce good runoff from any rains in the next few weeks.

STREAMFLOW

The John Day at Service Creek* flowed 96 percent of average last month and 95 percent of the October 1-June 1 average.

Streamflow forecasts have been raised again during May as a result of a period of warm weather coupled with rainfall which melted most of the short snowpack in the area.

The John Day at Prairie City is now expected to flow 35,000 a.f. or 65 percent of the April-September average and 80,000 a.f. or 59 percent at Ritter for the same April-September period.

Strawberry Creek near Prairie City is forecast at 70 percent or 6,400 a.f. for the April-September period.

The next report on water supply conditions in this area will be issued at the close of the irrigation season in October.

* Preliminary streamflow data furnished by U. S. Geological Survey, Portland, Oregon.

WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

RESERVOIR STORAG	(1,000 Ac.	Ft.) June 1, 1963
------------------	------------	-------------------

CrFox-Long Crs. Fair Poor Je-Mountain Creeks Creek Tair Poor Fair Poor Fair Poor Fair Poor Jun-Pine Creeks Day River, Main Fork Fair Poor	spring season Late season CAPACITY THIS YEAR L CAPACITY THIS YEA
CrFox-Long Crs. Fair Poor Fe-Mountain Creeks Fair Poor For Creek Fair Poor Fair Poor Fair Poor Fair Poor Day River, Main Fork Fair Poor	h CrFox-Long Crs. fair Poor ge-Mountain Creeks s Creek ry Creek an-Pine Creeks Day River, Main Fork Day River, Mid. Fork Day River, N. Fork Day River, S. Fork Fair Poor
	Day River, N. Fork Fair Poor Day River, S. Fork Fair Poor ment-Kimberly Fair Poor

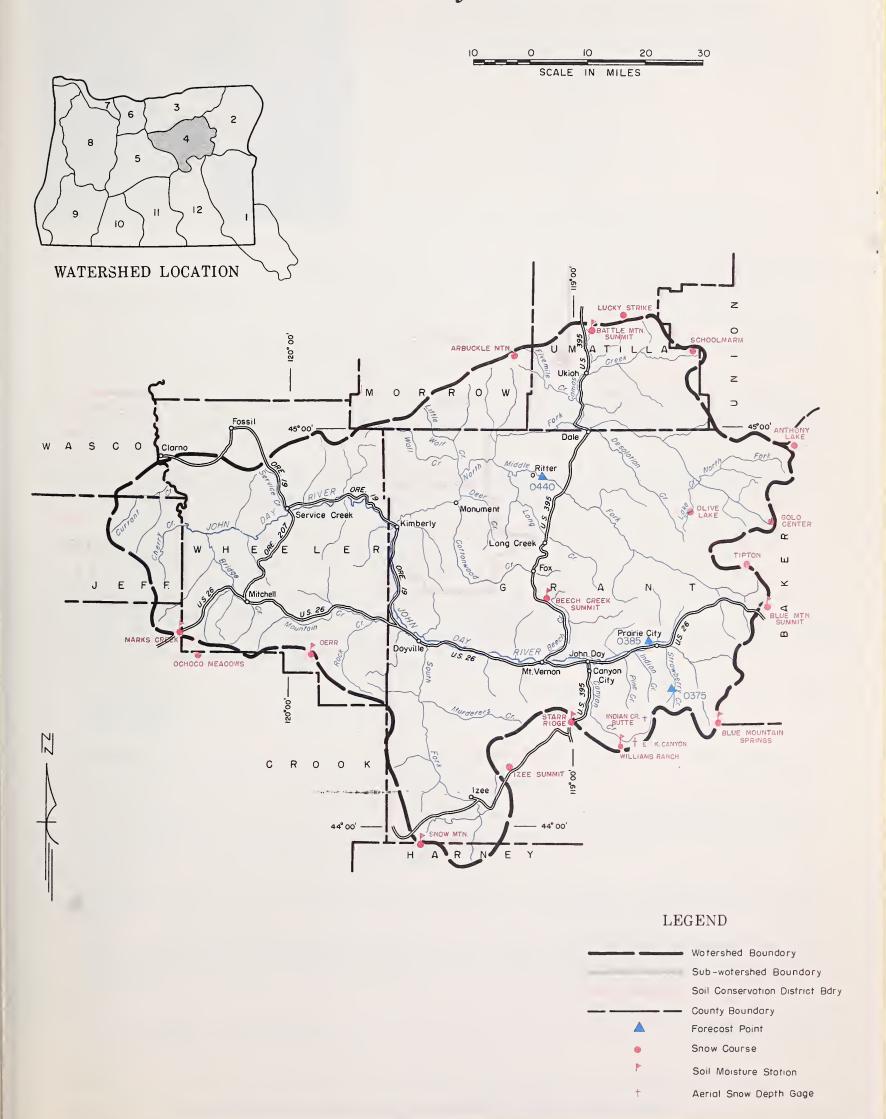
STREAMFLOW FORECASTS a (1,000 Ac. Ft.) as of June 1, 1963

NO.	FORECAST POINT NAME	FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT, OF AVERAGE
0385 0440 0375	John Day at Prairie City John Day, Middle Fork at Ritter Strawberry near Prairie City	35 33 80 79 6.4	April-Sept. April-July April-Sept. April-July April-Sept.	54 49 135 131 9.1	65 67 59 60 70

STATION			2475	THIS	LAST	2 YEARS	
NAME	ELEVATION	DEPTH	CAPACITY	DATE	YEAR	YEAR	AGO
Battle Mountain Summit Blue Mountain Springs Blue Mountain Summit Marks Creek Snow Mountain Starr Ridge	4340 5900 5100 4540 6300 5150	48 42 36 36 48 36	13.8 16.9 16.8 14.1 16.7 10.6	4-25-63 5-27-63 4-30-63 4-26-63 3-25-63 5-27-63	13.8 ^h 14.3 15.6 ^h 13.5 ^h 14.9 ^h 10.3	13.2 13.8 11.4 13.3 15.0 10.4	13.0 13.4 16.1 13.5
NOTE: The soil moisture figue year and earlier due total moisture in the	to a change	in the so	cale of eva	luation. 7	The new fid		

⁽a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) Not surveyed. (h) Nearest current data. (i) Partly estimated. (*) 1943-57 Adjusted average. (**) Average for 5 or more years in base period.

UPPER JOHN DAY WATERSHEDS





WATER SUPPLY OUTLOOK UPPER DESCHUTES, CROOKED WATERSHEDS

OREGON

*as of*JUNE 1, 1963

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER

GENERAL OUTLOOK - The 1963 water supply outlook for the Deschutes-Crookea River watersheds continues to improve over the "short" supplies in prospect as late as April 1.

Perioas of warm weather coupled with rain showers has depleted the "short" snowpack while resulting in higher May streamflow than was expected.

Lands served from reservoir stored water supplies will have a "near average" irrigation season but irrigators using natural streamflow are still expected to have late season water shortages.

SNOW COVER - Snow cover remains at only the highest and most protected areas of the watersheds after periods of abnormally warm weather in May.

SOIL MOISTURE - Watershed soils are better primed this year than for several years and will aid runoff from future storms or snowmelt.

RESERVOIR STORAGE - Storage on the main Deschutes is 104 percent of last year on June 1 and 122 percent of the 1943-57 average. Crane Prairie has 47,000 a.f. as compared to 29,800 last year. Crescent Lake has 60,600 acre feet and had 48,800 last year. Wickiup holds 172,900 a.f. and had 190,000 acre feet last year at this time.

Ochoco Reservoir has 45,100 acre feet compared to 47,000 at this time last year. Prine-ville Reservoir has 152,500 acre feet and had 155,300 last year on June 1.

STREAMFLOW - Warm weather and rain showers produced heavier than expected streamflow during May resulting in increases in streamflow forecasts.

The <u>Crooked</u> is now expected to flow 49,000 acre feet or 100 percent of the average for May-September. The inflow to <u>Ochoco Reservoir</u> has been raised to 14,000 a.f. or 88 percent of average for the same period.

Crane Prairie inflow is expected to be 86,000 a.f. or 60 percent for the April-September period. Crescent Creek is forecasted at 65 percent or 20,000 a.f. for the same period.

The Deschutes at Benham Falls forecast is 70 percent or 420,000 acre feet and the Little Deschutes is expected to flow 68,000 acre feet or 60 percent of the April-September average.

Odell Creek is now expected to flow 26,000 acre feet or 75 percent. Squaw and Tumalo are forecasted at 67 and 64 percent respectively.

W.T. FROST AND BOB L. WHALEY

U.S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

1 209 S.W. FIFTH AVENUE - PORTLAND 4. OREGON

WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

WAIER SUPPLY UUILUUR "A.	verage" or "Ex	cellent"
STREAM or AREA	FLOW	PERIOD
STREAM OF AREA	SPRING SEASON	LATE SEASON
Arnold Irrigation District	Average	Fair
Bear Creek	Fair	Poor
Beaver Creek	Fair	Poor
Camp Creek	Fair	Poor
Central Ore. Irrig. Dist.	Average	Fair
Crooked River (abv. Res.)	Average	Poor
Deschutes River	Fair	Poor
Hay-Trout Creeks	Fair	Poor
Lone Pine Irrig. Dist.	Average	Fair
Mill Creek	Fair	Poor
North Unit Irrig. Dist.	Average	Fair
Ochoco Creek	Average	Poor
Plainview-McCallister	Average	Poor
Sisters Irrigation Dist.	Average	Fair
Snow Creek Irrig. Dist.	Average	Fair
Squaw Creek Irrig. Dist.	Average	Fair
Swalley Ditch	Average	Average
Tumalo Project	Average	Average
Walker Basin Irrig. Dist.	Fair	Poor

RESERVOIR STORAGE (1,000 Ac. Ft.) June 1, 1963

	ED (First o	MEASUR	USABLE	RESERVOIR				
1943-57 AVERAGE	LAST YEAR	THIS YEAR	CAPACITY	RESERVOIR				
47.9 50.3 39.2 131.1	29.8 48.8 47.0 155.3 190.0	47.0 60.6 45.1 152.5 172.9	55.3 117.2 47.5 153.0 182.0	Crane Prairie Crescent Lake Ochoco Prineville Wickiup				
Note: The U.S. Bureau of Reclamation indicates that dead storage in the amount of 5360 acre feet may be included in the current storage figure for Crescent Lake.								
5	ount of the cu	the amo	orage in y be inc	that dead st acre feet ma				

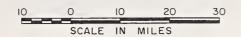
STREAMFLOW FORECASTS a (1,000 Ac. Ft.) as of June 1, 1963

	FORECAST POINT NO. NAME		FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE
NO.	NAME	,			OF AVERAGES
0535	Crane Prairie Reservoir total Inflow	86	April-Sept.	143	60
0600	Crescent at Crescent Lake d	20	April-Sept.	31	65
		16.8	April-July	25	67
0795	Crooked near Post	49	May-Sept.	49	100
		47	May-July	47	100
0645	Deschutes at Benham Falls d	420	April-Sept.	602	70
		285	April-July	404	71
0500	Deschutes below Snow Creek	44	April-Sept.	74	60
0630	Deschutes, Little near Lapine d	68	April-Sept.	113	60
		61	April-July	100	61
0848	Ochoco Reservoir net Inflow	14.0	May-Sept.	16.0	88
0555	Odell near Crescent	26	April-Sept.	· 34	75
0750	Squaw near Sisters	37	April-Sept.	55	67
0730	Tumalo near Bend d	35	April-Sept.	55	64

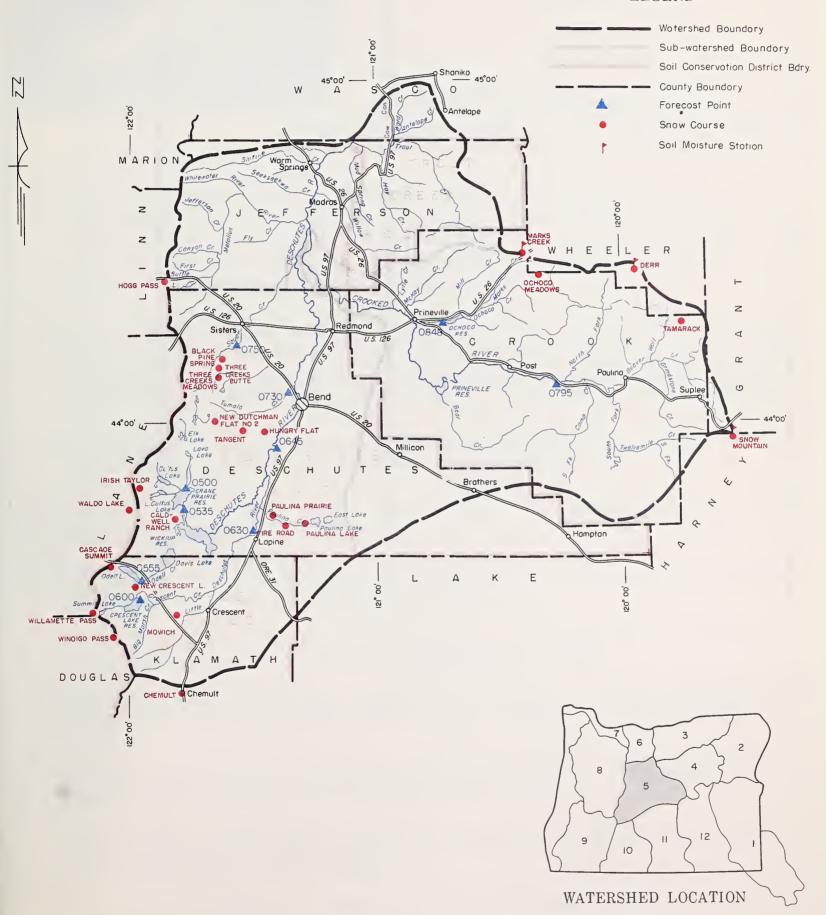
IL MOISTURE		PROFILE (Inches)		SOIL MOISTURE (Inches)			
STATION		DEPTH	TH CAPACITY	DATE	THIS	LAST	2 YEARS
NAME	ELEVATION	J			YEAR	YEAR	AGO
Marks Creek	4540	36	14.1	4-26-63	13.5 h	13.3	13.5
Snow Mountain	6300	48	16.7	3-25-63	14.9 h	15.0	
				`			
NOTE: The sell of the C				l		 	1
NOTE: The soil moisture f							
year and earlier du						ures repre	sent
total moisture in t	ne soll rather	than mois	sture avall	able to br	ants. ·	1	
			-				

⁽a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) Partly estimated. (*) 1943-57 Adjusted average. (h) Nearest current data.

UPPER DESCHUTES, CROOKED WATERSHEDS



LEGEND



Upper Deschutes, Crooked Watersheds

SNOW		CUR	CURRENT INFORMATION			PAST RECORD		
SNOW COURSE		DATE OF	SNOW DEPTH	WATER	WATER CON	TENT (Inches		
NAME	ELEVATION	DATE OF SURVEY	(Inches)	WATER CONTENT (Inches)	LAST YEAR	1943-57 AVERA		
Cascade Summit	4880	5/29	0	0.0	6.8			
						-		
						-		



WATER SUPPLY OUTLOOK HOOD, MILE CREEKS, LOWER DESCHUTES WATERSHEDS OREGON

as of JUNE 1, 1963

U.S.D.A. SOIL CONSERVATION SERVICE OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER

GENERAL OUTLOOK - The 1963 water supply outlook for Hood River and Wasco counties remains only fair as it was on May 1st. The "short" snowpack has been reduced even farther by periods of warm weather during May but streamflow is still expected to exceed the low years of 1941 and 1944. Severe late season shortages are expected for lands served by smaller streams with no stored water.

SNOW COVER - Snow cover is almost gone below the 5,000 foot level. Periods of warm temperatures melted the snow high on the watershed and reduced Phlox Point snow measurement, at 5,600 feet elevation, from 83 inches of depth and 35.9 inches of water content on the 26th of April to 19 inches of depth and 10.3 inches of water on May 29.

SOIL MOISTURE - Watershed soils continued to soak up water from the snowmelt and rain-fall and are much wetter in most areas than for several years.

RESERVOIR STORAGE - Clear Lake now has 5,600 acre feet in storage compared to 7,800 acre feet a year ago.

STREAMFLOW - The flow of Hood River near Hood River* was only 68 percent of average last month and 79 percent for the October-May period.

Streamflow forecasts remain unchanged from May 1. The White River is expected to flow 115,000 a.f. or 65 percent of the April-September period.

Hood River, West Fork near Dee, 111,000 a.f. or 64 percent of the same period and the main Hood River near Hood River, 160,000 a.f. or 60 percent of the May-September period.

Severe water shortages are expected on smaller streams without storage unless above normal precipitation occurs during the late summer months.

The next report on water supply conditions in this area will be issued at the close of the irrigation season in early October.

* Preliminary data from the U. S. Geological Survey, Portland, Oregon.

STREAMFLOW FORECASTS (1,000 Ac. Ft.) as of June 1, 1963

NÖ.	FORECAST POINT	FORECAST THIS YEAR	FORECAST PERIOD	194357 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE
1210	Hood near Hood River d	160	May-Sept.	268	60
		128	May-July	213	60
1185	Hood, West Fork near Dee	111	April-Sept.	174	64
	In 11 1 2 March VI-11 con	97	April-July	151	64
1015	White below Tygh Valley	115 105	April-Sept. April-July	178 161	65 65

SNOW		CUR	RENT INFORMA	PAST RECORD		
SNOW COURSE		DATE OF	SNOW DEPTH	WATER	WATER CONTENT (Inch	
NAME	ELEVATION	SURVEY	(Inches)	CONTENT (Inches)	LAST YEAR	1943-57 AVERAGE
Clear Lake	3500	5/29	0	0.0		
Clear Lake Experimental	3500	5/29	0	0.0		
Phlox Point	5600	5/31	19	10.3	63.7	
Still Creek	3700	5/29	0	0.0	0.0	

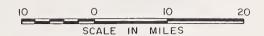
WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

RESERVOIR STORAGE (1,000 Ac. Ft.) June 1, 1963

STREAM or AREA	FLOW PERIOD		RESERVOIR	USABLE	MEASURED (First of		
	SPRING SEASON	LATE SEASON	RESERVOIR	CAPACITY	THIS YEAR	LAST YEAR	
Aldridge Ditch	Fair	Poor	Clear Lake		5.6	7.8	I
Badger Creek	Fair	Fair					١
Dee Irrigation Dist.	Fair	Poor					
East Fork Irrig. Dist.	Fair	Fair					
Farmers Irrig. Dist.	Fair	Poor					
Hood River Irrig. Dist.	Fair	Fair					
Juniper Flat Irrig. Dist.	Fair	Fair					
Middle Fork Irrig. Dist.	Fair	Poor					
Mile Creeks	Fair	Poor					
Mill Creek	Fair	Poor					١
Mount Hood Irrig. Dist.	Fair	Poor					
Rock-Gate-Threemile Crs.	Fair	Fair					
Tygh Creek White River	Fair	Poor					
WILLE KIVEL	Fair	Poor					

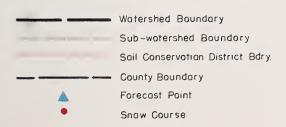
⁽a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) Partly estimated. (*) 1943-57 Adjusted average. (**) Average for 5 or more years in base period. (h) Water content for April 1 published as 3.0 and should have been 3.3.

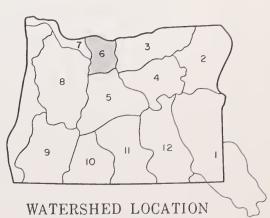
HOOD, MILE CREEKS, LOWER DESCHUTES WATERSHEDS





LEGEND





Hood, Mile Creeks, Lower Deschutes Watersheds



WATER SUPPLY OUTLOOK LOWER COLUMBIA WATERSHEDS OREGON

*as of*JUNE 1, 1963

U. S. D. A. SOIL CONSERVATION SERVICE

OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER

GENERAL OUTLOOK

The flow of the Columbia River at The Dalles, Oregon for the snowmelt season of 1963 will be the lowest since 1944, at about three-quarters of average, and among the lowest 10 percent of record. High water problems along the lower Columbia have been at a minimum. Peak flows are now occurring over most of the basin in early June and a rapid decline is anticipated. Water supplies will be considerably better than expected early in the snow season as a result of a relatively cool and wet period in April and the first half of May. Except for irrigated areas without storage, water supplies will be generally adequate. Storage for irrigation in principal tributaries is at capacity or will be in a few days.

SNOW COVER

Late season snowfall has been average or better, but not enough to make up for the deficiency of mid-winter. Remaining snowpack at the highest elevations is near average in the extreme northern section of the basin and along the Cascade range for this late aate. Otherwise over the basin, remaining snow is less than average, following a pattern established in mid-winter.

SOIL MOISTURE

Mountain soil moisture is typical for this time of year -- generally wet at high elevations. Irrigated lands have had sufficient rainfall to reduce early season demanas to less than usual.

STREAMFLOW

The winter flows for the Columbia at The Dalles* are as follows:

Month	Percent of A	Percent of Average Discharge (1943–5								
October	111 Aaj	usted for	storage							
November	116	11 11	П							
December	124	n II	и							
January	93	11 11	II							
February	145	11 11	11							
March	95	11 11	II							
April	73	11 11	II .							
May	73	11 11	11							

^{*} From preliminary data furnished by U. S. Geological Survey, Portland, Oregon.

HOMER J. STOCKWELL

U.S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

209 S.W. FIFTH AVENUE - PORTLAND 4. OREGON

STREAMFLOW FORECASTS a (1,000 Ac. Ft.) as of June 1, 1963

NO.	FORECAST POINT	FORE THIS	CAST YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE
1057	Columbia at The Dalles	47,	000	June-Sept.	64,300	73

HISTORICAL DATA (Columbia River at The Dalles)

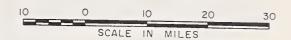
VEAD	S	STREAMFLOW ^C (1,000 A.F.)	PEAK ^e	0.475
YEAR	APR.— SEPT.	APR. — JUNE	MAY JUNE	(1,000 c.f.s)	DATE
1943	115,000	75,300	52,400	541	June 21
1944	61,900	39,200	32,100	326	June 19
1945	81,600	54,600	47,300	505	June 8
1946	108,100	75,400	59,600	581	May 30
1947	100,300	70,000	56,800	536	May 11
1948	130,500	94,600	81,900	999	May 31
1949	9 5, 700	71,400	56,000	6 2 2	May 18
1950	120,400	74,700	61,200	744	June 25
1951	113,000	75,600	59,100	597	May 26
1952	107,700	77,500	57,300	557	May 28
1953	100,600	64,900	55, 800	609	June 17
1954	119,500	70,500	59,300	561.	May 23
1955	99,500	58,300	50,300	545	June 26
1956	131,400	96,900	75,800	815	June 3
1957	105,700	80,500	67,200	700	May 22
1943-57 Avg.	1 0 6,100	7 2, 000	58,100	616	
1958	97,700	72,000	58,600	593	May 31
1959	112,500	71,900	58,900	555	June 23
1960	97,0 0 0	64,000	48,000	442	June 6

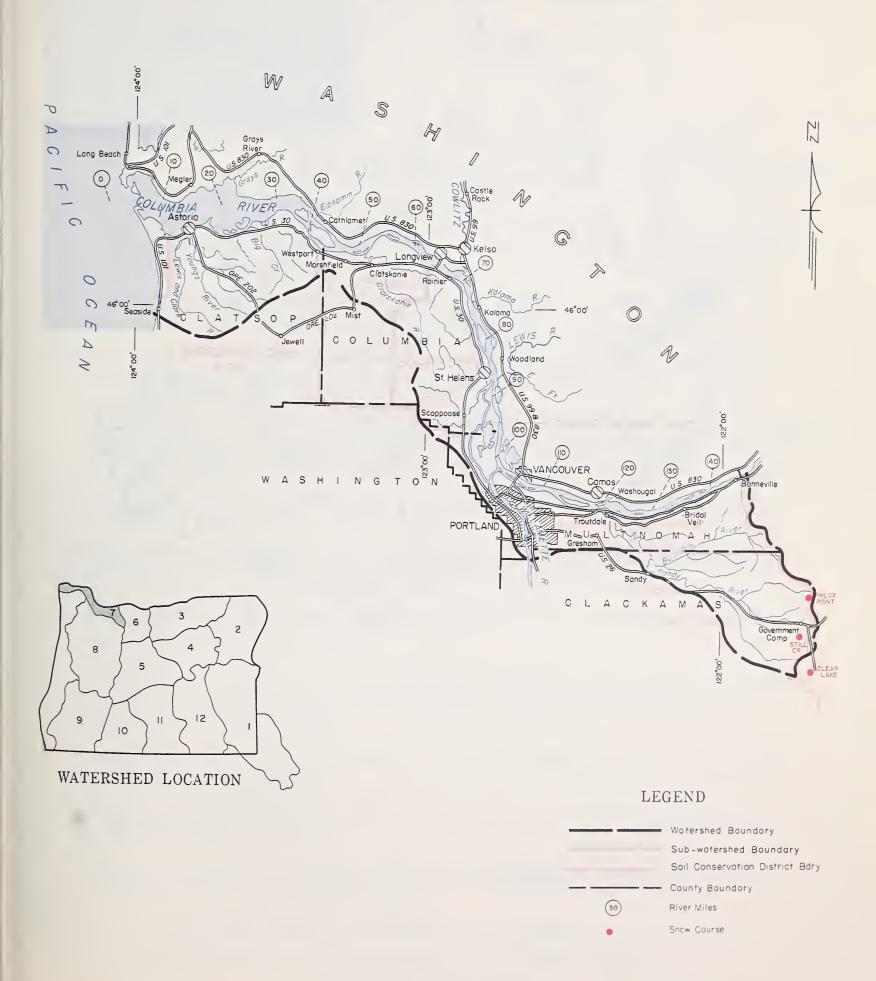
LOWER COLUMBIA RIVER FLOOD STAGES (with 9.5' tide at Astoria) f

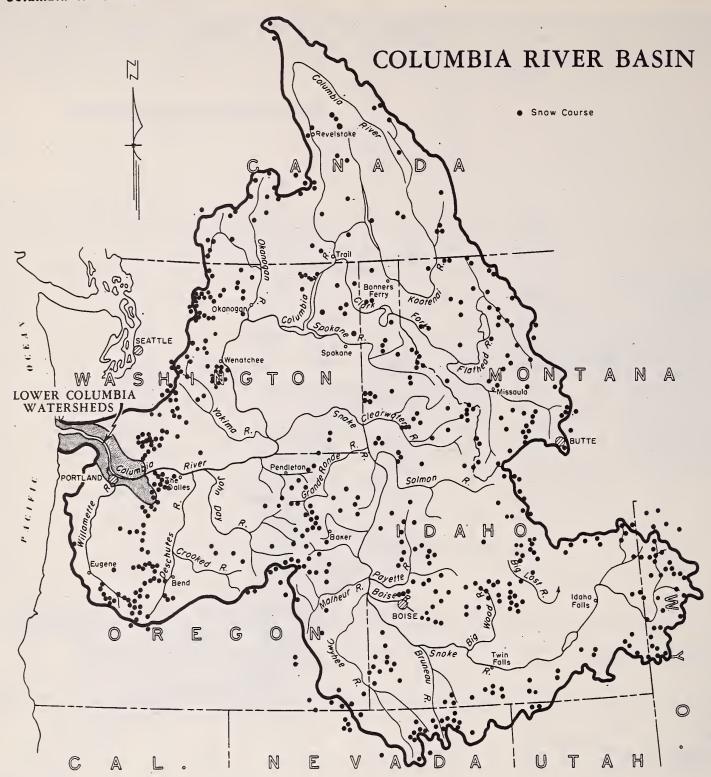
				DRAINA	GE DISTRICT PUMI	PHOUSE		
·VANCOUVER g	FLOW AT	ŞANDY	SAUVIE ISL.	SCAPPOOSE	DEER ISL.	RAINIER	BEAVER	WOODSON
GAGE (Weather Bu.)	THE DALLES (1,000 c.f.s)	118.9	96. 0	91.0	RIVER MILES	62.0	52.0	47. 0
35 (1894) 34 33 32 31 (1948) 30 29 28 27 (1956) 26 (1950) 25 24 23 22 21 20 19 18 17 16	1210 1160 1100 1050 1000 940 890 840 790 750 700 660 630 590 560 530 510 480 450 430	41.2 40.5 39.6 38.9 38.0 36.6 35.5 34.3 33.0 32.1 30.7 29.7 29.0 28.1 27.2 26.2 25.5 24.4 23.4 22.4	34.2 33.5 32.4 31.5 30.7 29.5 28.5 27.5 26.5 25.5 24.2 23.0 22.3 21.4 20.7 19.8 19.2 18.3 17.4 16.5	33.3 32.5 31.4 30.5 29.5 28.5 27.7 26.7 25.6 24.6 23.2 22.2 21.4 20.3 19.5 18.6 18.0 17.2 16.4 15.5	28.5 27.7 26.7 25.7 25.1 24.3 23.7 22.8 21.8 20.9 19.7 19.0 18.4 17.2 16.4 15.5 15.0 14.3 13.7 13.0	21.9 21.2 20.2 19.5 18.8 18.1 17.5 17.0 16.2 15.5 14.6 14.1 13.6 13.0 12.6	17.5 17.0 16.1 15.4 14.7 14.0 13.4 13.0 12.5 12.2 11.7 11.4 11.2 10.9 10.6	15.5 15.0 14.3 13.7 13.0 12.4 11.8 11.4 11.0 10.7 10.3 10.2 10.0 9.7 9.6 9.4 9.3 9.1 8.9 8.7

⁽a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Observed flow corrected for storage in F.D.R., Kootenai, Pend Oreille, Flathead, Hungry Horse, Lake Chelan, Coeur d'Alene and Grand Coulee Equalizer: (d) Not scheduled. (e) Observed peak. (f) Based on Corps of Engineers automatic water stage recorder data. (g) Vancouver Weather Bureau gage zero is 1.82' above M.S.L. All other readings are in feet above M.S.L.

LOWER COLUMBIA WATERSHEDS









WATER SUPPLY OUTLOOK WILLAMETTE WATERSHEDS OREGON

*as of*JUNE 1, 1963

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER

GENERAL OUTLOOK - The 1963 water supply outlook has continued to improve for those lands served by reservoir stored water supplies. Periods of warm temperatures coupled with above normal rainfall produced more streamflow during May than was expected and brought reservoir storage up.

Smaller streams without stored water are still expected to have late season shortages unless timely rainfall continues during the summer.

SNOW COVER - Periods of abnormal temperatures high on the watershed coupled with heavy rains has depleted the snowpack and left it only at the highest points.

Phlox Point on Mount Hood at 5,600 feet elevation was the only course of 10 measured which had any snow. It had 19 inches of depth containing 10.3 inches of water content. Last year it contained 63.7 inches of water on June 1.

SOIL MOISTURE - Rains have continued to prime watershed soils to near the saturation point.

RESERVOIR STORAGE - Storage in six multi-purpose reservoirs operated by the Corps of Army Engineers is above average and slightly above last year at this time.

STREAMFLOW - The Middle Fork of the Willamette* flowed 119 percent of average for May and 89 percent since October 1.

Streamflow forecasts have raised slightly as a result of better than expected May flows and now range from 62 percent on the Clackamas at Big Bottom to 82 percent for the Middle Fork of the Willamette.

The McKenzie is forecast at 65 percent of the April-September flow at Vida and 67 percent at McKenzie Bridge.

The South Santiam is expected to flow 66 percent and the North Santiam 65 percent for the April-September period.

The Row is forecasted to flow 80 percent and the Willamette at Salem 75 percent of this same April through September period.

The next water supply report will be issued in early October.

* Preliminary data from the U. S. Geological Survey, Portland, Oregon.

WATER SUPPLY OUTLOOK expressed as "Paar", "Fair" "Average" or "Excellent"

RESERVOIR	STORAGE	(1,000 Ac. Ft.)	June 1, 1963
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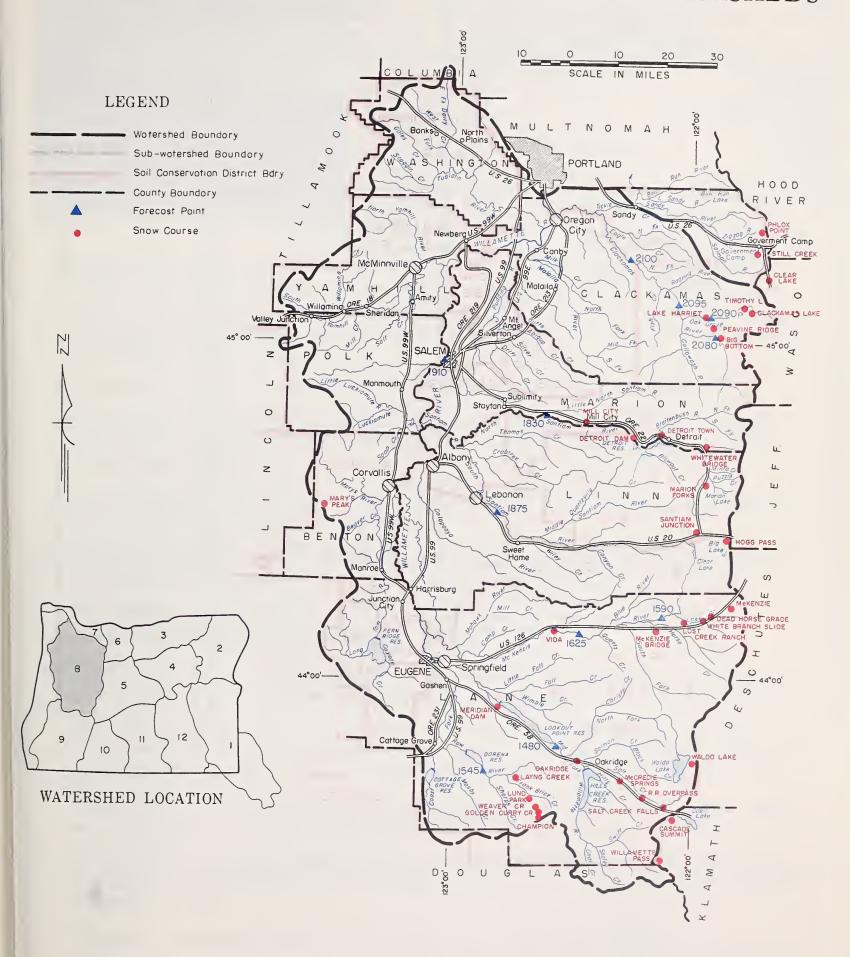
OTDEAN - ADEA	FLOW	PERIOD		RESERVOIR	USABLE	MEASUR	MEASURED (First o	
STREAM or AREA	SPRING SEASON	LATE SEASON		KESEKVOIK	CAPACITY	THIS YEAR	LAST YEAR	1943 AVER
Calapooya	Fair	Poor	·	Cottage Grove	30.0*	29.1	29.0	29
Clackamas	Fair	Fair		Detroit .		297.6	267.5	25
McKenzie	Fair	Fair		Dorena	70.5*	66.0	65.7	64
Molalla	Fair	Poor		Fern Ridge	94.2*		93.8	8'
Santiam, North	Fair	Fair		Hills Creek Res.	200.0*	193.8	192.6	
Santiam, South	Fair	Fair		Lookout Point	337.2*	326.0	318.2	
Willamette, Coast Fork	Fair	Fair						
Willamette, Middle Fork	Fair	Fair						1
				*Multiple pur reserved pr				
							1	

STREAMFLOW FORECASTS a(1,000 Ac. Ft.) as of June 1, 1963

	FORECAST POINT	FORECAST	FORECAST PERIOD	1943-57	THIS YEAR
NO.	NAME	THIS YEAR		AVERAGE	OF AVERAGE
2080	Clackamas at Big Bottom	115	April-Sept.	184	62
		93	April-July	150	62
2100	Clackamas at Estacada	550	April-Sept.	879	63
		480	April-July	763	63
2095	Clackamas above Three Lynx	425	April_Sept.	674	63
1.500		365	April-July	578	63
1590	McKenzie at McKenzie Bridge	430	April-Sept.	640	67
1665	W W I WILL	325	April-July	488	67
1625	McKenzie near Vida	885	April-Sept.	1362	65
2090	Only Conserve Family alternative Property Tartisla	725	April-July	1120	65
2090	Oak Grove Fork above Power Intake	130	April-Sept.	198	66 65
1545	Row near Dorena	103 91	April-July	156 114	80
1040	Now hear porena	87	April-Sept. April-July	109	80
1830	Santiam, North at Mehama d	630	April-Sury April-Sept.	968	65
	Sartian, North at Herana	555	April-July	866	64
1875	Santiam, South at Waterloo	430	April-Sept.	652	66
	land and the second a	400	April-July	616	65
1480	Willamette, Mid. Fk. blw. N. Fk. nr. Oakridge	750	April-Sept.	909	82
	,	660	April-July	804	82
1910	Willamette at Salem d	4095	April-Sept.	5461	75
		3655	April-July	4942	74
1					
1					

⁽a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) Not surveyed. (*) 1943-57 Adjusted average. (**) Average for 5 or more years in base period.

WILLAMETTE WATERSHEDS



Willamette Watersheds

SNOW		CURI	RENT INFORMA	TION	PAST RECORD		
SNOW COURSE		DATE OF	SNOW DEPTH	WATER CONTENT		ENT (Inches)	
NAME	ELEVATION	SURVEY	(Inches)	(Inches)	LAST YEAR	1943-57 AVERAGE	
Cascade Summit Clear Lake Clear Lake (Experimental) McCredie Springs Meridian Dam Oakridge Phlox Point Railroad Overpass Salt Creek Falls Still Creek	4880 3500 3500 2120 750 1310 5600 2750 4000 3700	5/29 5/29 5/29 5/29 5/29 5/29 5/29 5/29	0 0 0 0 0 19 0 0	0.0 0.0 0.0 0.0 0.0 10.3 0.0 0.0	6.8 0.0 0.0 0.0 63.7 0.0 0.0		



WATER SUPPLY OUTLOOK ROGUE, UMPQUA, WATERSHEDS OREGON

as of JUNE 1, 1963

U. S. D. A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER

GENERAL OUTLOOK - The 1963 water supply outlook for the Rogue-Umpqua area has continued to improve during May and is now near average for lands served by stored water supplies. Above normal temperatures and rainfall produced higher than average May streamflow increasing reservoir storage while melting the already "short" snowpack even higher on the watersheds.

Late season water shortages are still expected for areas without stored water.

SNOW COVER - Periods of above normal temperature during May melted the snowpack high on the watershed. Snow cover remains at only the highest and most protected areas on the watershed.

SOIL MOISTURE - Upper watershed soils, close to the point of saturation, have assisted considerably in boosting runoff during May.

RESERVOIR STORAGE - Reservoir stored water of the Talent Irrigation District now totals 114,900 acre feet compared with 95,500 acre feet one year ago.

The Medford and Rogue River Valley Irrigation Districts have about 19,400 acre feet compared with 13,800 acre feet on June 1, 1962.

STREAMFLOW - The flow of Rogue River at Raygold* was 125 percent of average for May due to heavy precipitation and above normal temperatures over most of the watershed.

Streamflow forecasts have been raised 14 to 17 percent and the Rogue at Raygold is now forecasted at 82 percent or 700,000 a.f. for the May-September period. Grants Pass Irrigation District probably will not find it necessary to rotate canal pumping.

Water supplies for the Eagle Point Irrigation District have continued to improve although some late season shortages are still expected unless timely rainfall continues.

The North Umpqua below Lemolo Reservoir is forecast at 80 percent of the May-September average and the Applegate and Illinois Rivers are forecast at 78 percent for the April-September period.

The next water supply outlook will be issued at the close of the irrigation season early in October.

* Preliminary data furnished by the U. S. Geological Survey, Portland, Oregon.

W.T. FROST AND BOB L. WHALEY

U.S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

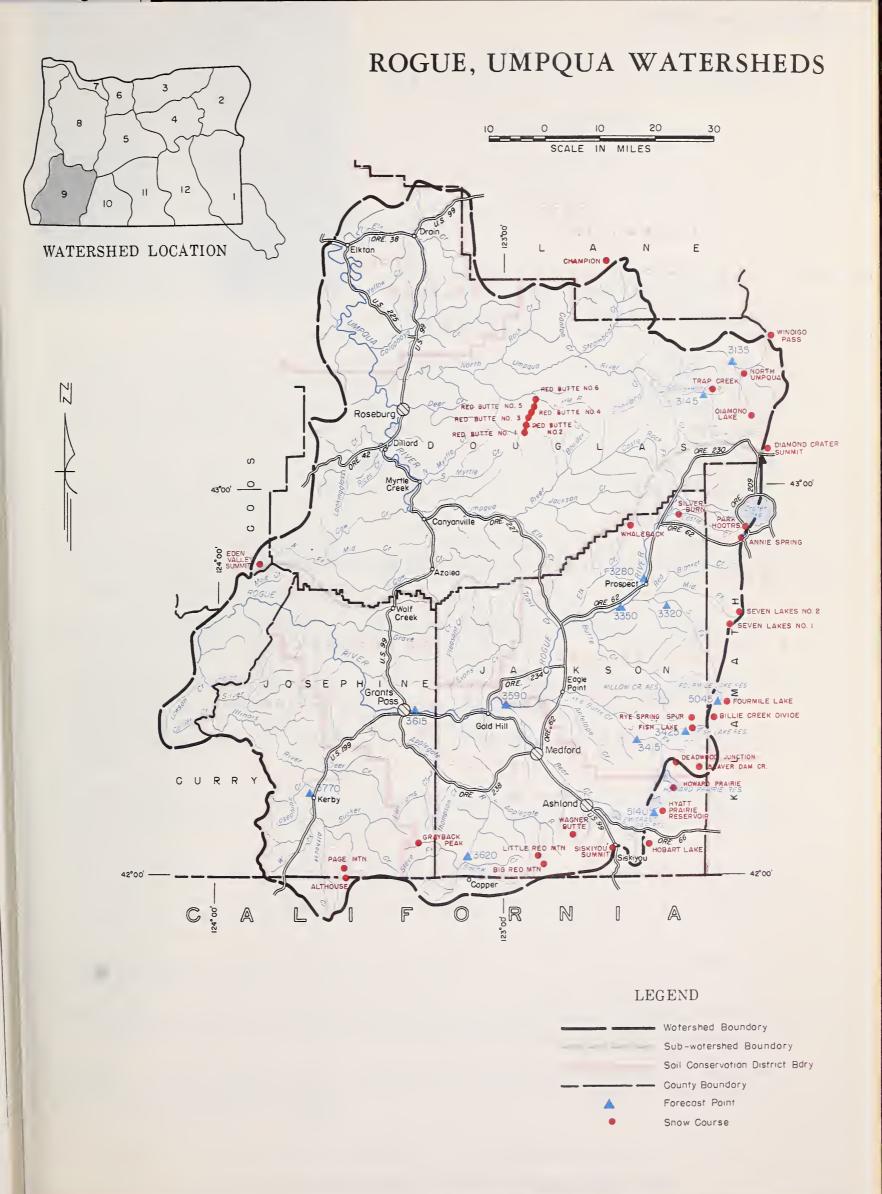
209 S.W. FIFTH AVENUE - PORTLAND 4. OREGON

STREAM or AREA	FLOW	FLOW PERIOD		RESERVOIR	USABLE	MEASUR	ED (First o	
STREAM OF AREA	SPRING SEASON	LATE SEASON		RESERVOIR	CAPACITY	THIS YEAR	LAST YEAR	1943 - 5
Althouse Creek	Fair	Poor	1	Emigrant Gap	39.0	37.8	38.9	7.
Applegate River, Big	Average	Fair		Fish Lake	7.8	6.3	6.0	6.
Applegate River, Little	Average	Poor		Fourmile Lake	16.1	13.1	7.8	13.
Ashland Creek	Fair	Poor		Howard Prairie *	60.0	61.6	43.1	_
Butte Creek, Big	Fair	Poor		Hyatt Prairie	16.1	15.5	13.5	12.
Butte Creek, Little	Fair	Poor			}			
Cow Creek	Fair	Poor						
Deer Creek	Fair	Poor	1			ŀ		
Elk Creek	Fair	Poor			1			
Emigrant Cr. (above Res.)	Fair	Poor						
Evans Creek	Fair	Fair						
Gold Hill Irrigation Dist.	Average	Fair						
Grants Pass Irrig. Dist.	Average	Fair						
Grave Creek	Fair	Fair						
Illinois River, East Fork	Average	Poor			į.			
Illinois River, West Fork	Average	Poor						
Jump-off-Joe Creek	Fair	Fair						
Neil Creek	Fair	Poor			1			
Red Blanket Creek	Fair	Poor			1			
Rogue River	Fair	Fair						
Sucker Creek	Fair	Poor						
Table Rock Irrig. Dist.	Average	Fair						
Thompson Creek	Fair	Poor						
Wagner Creek	Fair	Poor						
Williams Creek	Fair	Poor						

STREAMFLOW FORECASTS a (1,000 Ac. Ft.) as of June 1, 1963

	FORECAST POINT	FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT,
3620 3145 5045 5140 3770	Applegate near Copper Clearwater above Trap Creek d Fourmile Lake net Inflow d Hyatt Reservoir net Inflow d Illinois River at Kerby d	102 60 6.1 *** 153 148 ***	April-Sept. April-Sept. April-Sept. April-Sept. April-Sept. April-July	131 73 7.4 6.2 196 190	AS PERCENT OF AVERAGE & 78 82 82 82 78 78
3425 3415	Little Butte, N. Fk. at Fish Lake nr Lake Cr.d Little Butte, S. Fk. nr. Lake Creek Note: Minimum flow will drop to 100 c.f.s. by ***	***	April-Sept. April-July	16.9 42	
3280	Rogue above Prospect	221 173	May-Sept. May-July	270 211	82 82
3320	Rogue, South Fork near Prospect d Rogue below South Fork	54 45 485	May-Sept. May-July May-Sept.	65 53 584	83 84 83
3590	Rogue at Raygold near Central Point	372 700 474	May-July May-Sept. May-July	443 733 571	84 82 83
3615 3135	Rogue at Grants Pass Umpqua, No. blw. Lemolo Res. nr. Toketee Falls d ***Snow surveys pertinent to these forecast points have not been taken and use of the forecast equations is nullified.	565 125	May—Sept. May—Sept.	687 157	82 80

⁽a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) Not Surveyed. (h) Construction. (i) 7 of 18 sampling points. (j) Partly estimated. (*) 1943-57 Adjusted average.



Rogue, Umpqua Watersheds



WATER SUPPLY OUTLOOK KLAMATH WATERSHEDS OREGON

*as of*JUNE 1, 1963

U.S.D.A. SOIL CONSERVATION SERVICE
OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER

GENERAL OUTLOOK - The 1963 water supply outlook in Klamath county continues to improve. Reservoirs received good increases in May as a result of much better streamflow than expected, especially from the eastern side of the Basin. Some late season shortages are still expected for land without stored water.

SNOW COVER - Snow fell periodically during May and was melted by periods of warm temperatures. This year's "short" snowpack is disappearing fast and now remains at only the highest elevations.

SOIL MOISTURE - Good soil moisture has been a key factor this year in producing much better streamflow than would otherwise have resulted from a limited snowpack and about average precipitation since October 1.

RESERVOIR STORAGE - Reservoir storage now averages 111 percent of last year at this time and 91 percent of the 1943-57 average for June 1.

Clear Lake now holds 159,000 acre feet. Last year it held 109,100. Gerber now has 67,500 a.f. in storage and last year it held only 35,200 on June 1.

Upper Klamath Lake has 553,000 a.f. in storage and last year it held 557,500 at this time.

STREAMFLOW - Streamflow has been much better during May than expected. The May flow of streams from the eastern side of the Basin was almost double that expected on May 1.

As a result of good May streamflow, the forecasts have been raised 20 to 74 percent.

The inflow to Clear Lake for the May-June period is now expected to be 13,200 a.f. or 81 percent.

Gerber Reservoir inflow is forecast to be 8,000 a.f. or 118 percent for the May-June period; 6,600 acre feet of this came in May.

The Sprague River has been producing much better runoff than expected and the forecast is now raised to 200,000 a.f. or 105 percent for the May-September period.

Inflow to Upper Klamath Lake is expected to be 80 percent of average or 345,000 a.f. The Williamson below the Sprague forecast was raised to 270,000 a.f. or 82 percent of the May-September average.

W.T. FROST AND BOB L. WHALEY

U.S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

209 S.W. FIFTH AVENUE - PORTLAND 4, OREGON

WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

RESERVOIR STORAGE (1,000 Ac. Ft.) June 1, 1963

STREAM or AREA	FLOW	FLOW PERIOD RESERVOIR USABLE MEASU		MEASUR	ED (First o	f Month)		
STALAM OF AREA	SPRING SEASON	LATE SEASON		WEGENVOIN	CAPACITY	THIS YEAR	LAST YEAR	1943 - 57 AVERAGE
Ft. Klamath Valley Lost River (Clear Lake) Lost River (Gerber) Lost River (Willow Res.) Sprague River Upper Klamath Lake Williamson River	Fair Average Average Average Average Fair	Poor Average Average Fair Fair Average Poor		Clear Lake Gerber Upper Klamath Lake	440.2 94.0 584.0	159.0 67.5 553.0	109.1 35.2 557.5	272.3 62.3 520.3

STREAMFLOW FORECASTS a (1,000 Ac. Ft.) as of June 1, 1963

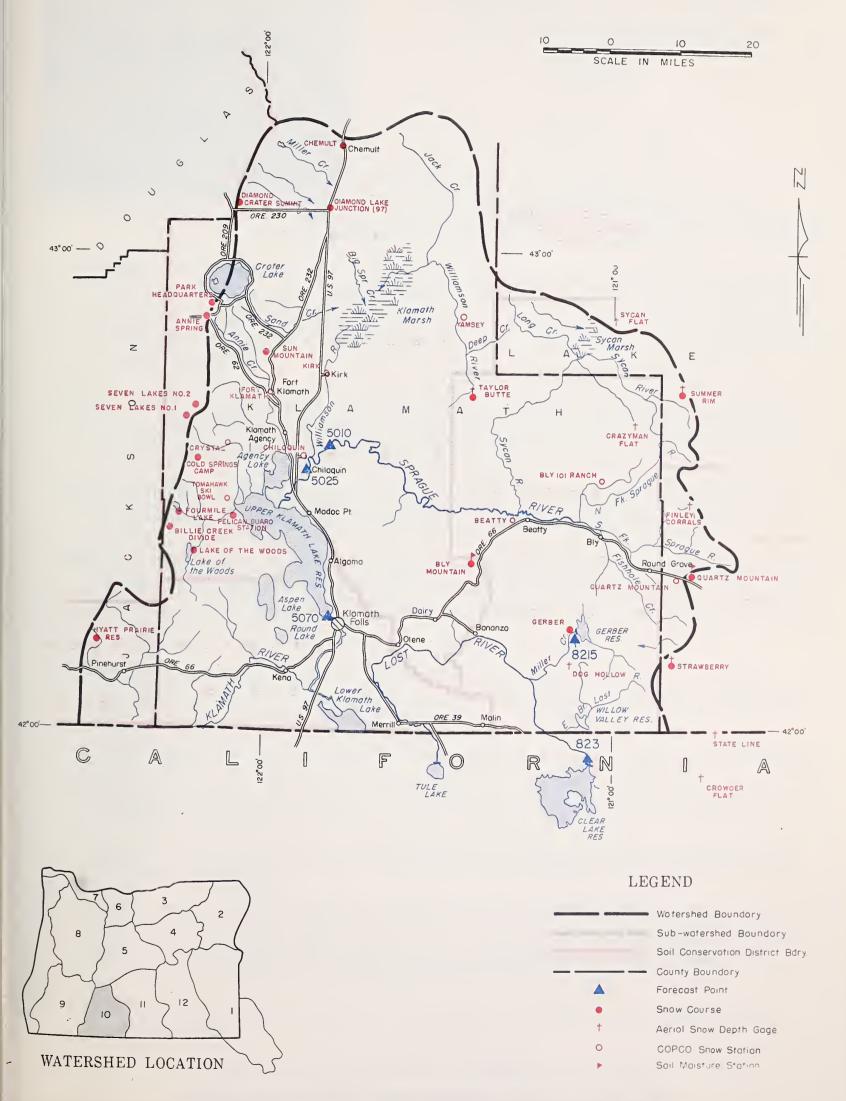
NO.	FORECAST POINT	FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE
823 8215 5010 5070 5025	Clear Lake Reservoir Inflow ^g Gerber Reservoir Inflow ^g Sprague near Chiloquin Upper Klamath Lake net Inflow ^g Williamson below Sprague River	13.2 8.0 200 345 270	May-June May-June May-Sept. May-Sept. May-Sept.	16.3 6.8 191 431 330	81 118 105 80 82
			•		

L MOISTURE		PROFILE (Inches) SOIL MOISTURE (Inches		RE (Inches)	s)		
STATION		DEPTH		DATE	THIS	LAST	2 YEARS
NAME	ELEVATION	DEFIN	CAPACITY	DATE	YEAR	YEAR	AGO
Bly Mountain Quartz Mountain	5090 5320	42 48	14.0 15.3	4-26-63 4-26-63	11.5 ^j 7.3 ^j	11.4 6.3	11.4

NOTE: The soil moisture figures published herein are <u>not</u> comparable to those published last year and earlier due to a change in the scale of evaluation. The new figures represent total moisture in the soil rather than moisture available to plants.

(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) From PP&L or USBR records of inflow. (h) Flashboards increase capacity to 513.0 (i) Water content partly estimated. (j) Nearest current data. (k) Not surveyed. (*) 1943-57 Adjusted average. (**) Average for 5 or more years in the base perioa.

KLAMATH WATERSHEDS





WATER SUPPLY OUTLOOK LAKE COUNTY, GOOSE LAKE WATERSHEDS OREGON

as of JUNE 1, 1963

U. S. D. A. SOIL CONSERVATION SERVICE OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER

GENERAL OUTLOOK - The 1963 water supply outlook in Lake County has changed greatly this year from extremely gloomy at mid-winter to near average for most lands served by reservoir stored water supplies. Severe late season shortages are still expected for lands dependent on natural streamflow however, unless timely rains continue throughout the season.

SNOW COVER - Mountain snow cover melted rapidly when mid-May temperatures became excessively warm. Very little snow remains on the watershed and this can be found only at the highest and most protected locations.

SOIL MOISTURE - Upper watershed soils, close to the point of saturation, have assisted considerably in boosting the runoff from snowmelt and rainfall.

RESERVOIR STORAGE - Water is still running over the spillways of Drews and Cottonwood Reservoirs. Drews now holds 65,300 acre feet compared to 36,500 a.f. last year on June 1 and Cottonwood has 8,900 acre feet in storage and last year held only 4,300 acre feet.

STREAMFLOW - Streamflow forecasts have again been raised in this area as a result of above normal rainfall. The Chewaucan is now forecasted at 67 percent of the April-June average or 55,000 acre feet.

Deep Creek is expected to flow 57,000 acre feet or 80 percent for the same period.

Honey and Twentymile Creeks are forecasted at 86 and 75 percent or 14,000 and 15,000 respectively.

The inflow to Drews Reservoir is expected to be 35,000 acre feet or 103 percent of the April-July period.

Above normal rainfall on already wet soils has been the major contribution to the good increases in streamflow since April 1. These streams are expected to drop off rapidly and late season water shortages can be expected on smaller streams without storage unless timely rains continue throughout the summer.

The next water supply outlook will be issued at the close of the irrigation season in early October.

W.T. FROST AND BOB L. WHALEY

U.S. DEPARTMENT OF AGRICULTURE - SOIL CONSERVATION SERVICE

209 S.W. FIFTH AVENUE - PORTLAND 4. OREGON

WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

STREAM or AREA	FLOW PERIOD		RESERVOIR	USABLE	MEASUR	RED (First o	f Month)
SIREAM OF AREA	SPRING SEASON	LATE SEASON	RESERVOIR	CAPACITY	THIS YEAR	LAST YEAR	1943 - 57 AVERAGE
Chewaucan River Crooked Creek Deep Creek Dry Creek East Side Goose Lake Guano Lake Honey Creek Lakeview Water Users Assn. Rock Creek (Hart Mtn.) Silver-Buck Creeks Summer Lake Thomas Creek Twentymile Creek Warner Lakes	Fair Fair Fair Fair Fair Fair Average Fair Fair Fair Fair Fair Fair Fair Fair	Poor Poor Poor Poor Poor Poor Average Poor Poor Poor Poor Poor Poor Poor Poo	Cottonwood Drew	8.7	8.9 65.3	4.3 36.5	3 . 8 56 . 2

STREAMFLOW FORECASTS a (1,000 Ac. Ft.) as of June 1, 1963

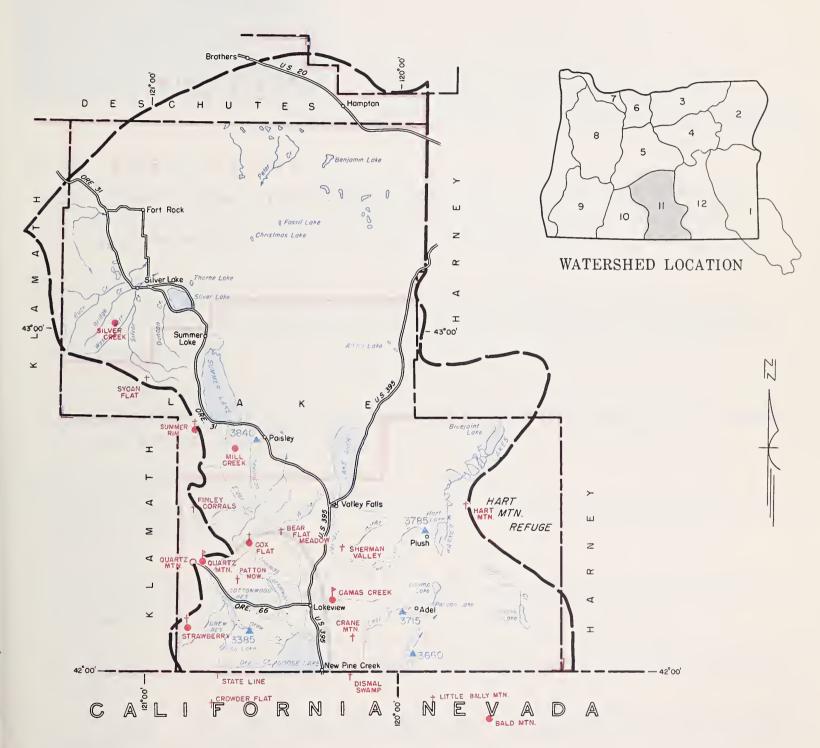
NO.	FORECAST POINT	FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT, OF AVERAGE
3840 3715 3385 3785 3660	Chewaucan near Paisley Deep above Adel Drew Reservoir net Inflow Honey near Plush Twentymile near Adel	55 57 35 14.0 15.0	April-June April-June April-July April-June April-June	82 71 34 16.3 20	67 80 103 86 75

L MOISTURE		PROFILE	(Inches)	SOIL MOISTURE (Inches)			
STATION		DEPTH	CAPACITY	DATE	THIS	LAST	2 YEARS
NAME	ELEVATION]	CAPACITI	YEAR	YEAR	AGO	
Camas Creek	5720	42	14.5	6-3-63	12.4	12.5	
Quartz Mountain	5320	48	15.3	4-26-63	7.3 ^g	6.3	6.8
NOTE: The soil moisture fig year and earlier due total moisture in the	to a change i	in the scal	le of evalu	ation. The	e new figu		
	1	1					
					-		

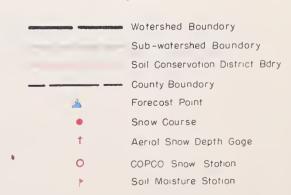
⁽a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (*) 1943-57 Adjusted average. (**) Average for 5 or more years in base period. (g) Nearest current data.

LAKE COUNTY, GOOSE LAKE WATERSHEDS





LEGEND



Lake County, Goose Lake Watersheds



WATER SUPPLY OUTLOOK HARNEY BASIN WATERSHEDS OREGON

*as of*JUNE 1, 1963

U. S. D. A. SOIL CONSERVATION SERVICE

OREGON STATE UNIVERSITY ... OREGON STATE ENGINEER

GENERAL OUTLOOK

The 1963 water supply outlook in Harney County has changed greatly this year from extremely gloomy to reasonably satisfactory. Some late season shortages are still expected however unless timely rains continue throughout the summer.

SNOW COVER

Mountain snow cover melted rapidly when mid-May temperatures became excessively warm. The little snow that remains on the watersheds is found only at the highest and most protected areas.

SOIL MOISTURE

Upper watershed soils, close to the point of saturation, have assisted greatly in boosting the runoff from snowmelt and rainfall.

RESERVOIR STORAGE

Stock ponds and irrigation reservoirs received good inflows during May and are in good condition throughout the Basin.

STREAMFLOW

Runoff during May was much better than expected and forecasts of streamflow were adjusted accordingly.

The <u>Silvies</u> is now forecasted at 70 percent or 75,000 acre feet for the April-September period.

Silver Creek is expected to produce 20,000 acre feet of water in the April-July period or 77 percent of average.

The <u>Blitzen</u> is expected to flow 85 percent of the April-September average or 57,000 acre feet. <u>Trout Creek</u> is forecasted at 80 percent or 7,400 acre feet for the April-September period.

Most streams in the area are beginning to drop off and are expected to recede rapidly. Late season water shortages can be expected unless rains continue during the summer season.

The next water supply report will be issued at the close of the irrigation season in early October.

WATER SUPPLY OUTLOOK expressed as "Poor", "Fair" "Average" or "Excellent"

RESERVOIR STORAGE (1,000 Ac. Ft.) June 1, 1963

070544 4054	FLOW	PERIOD	DECEDY	(OID	USABLE	MEASUR	ED (First o	f Month
STREAM or AREA	SPRING SEASON	LATE SEASON	RESERV	/OIR	CAPACITY	THIS YEAR	LAST YEAR	1943 - AVERAG
Catlow Valley	Fair	Poor						
Cow Creek	Fair	Poor				,		
Donner und Blitzen River	Fair	Poor						
Mill-Coffeepot Creeks	Fair	Poor						
Rattlesnake Creek	Fair	Poor						
Rock Creek (Hart Mtn.)	Fair	Poor						
Silver Creek	Fair	. Poor						
Silvies River	Fair	Poor						
Soldier-Prather Creeks	Fair	Poor						
Trout Creek	Fair	Poor						
Whitehorse Creek	Fair	Poor						
			·					

STREAMFLOW FORECASTS a (1,000 Ac. Ft.) as of June 1, 1963

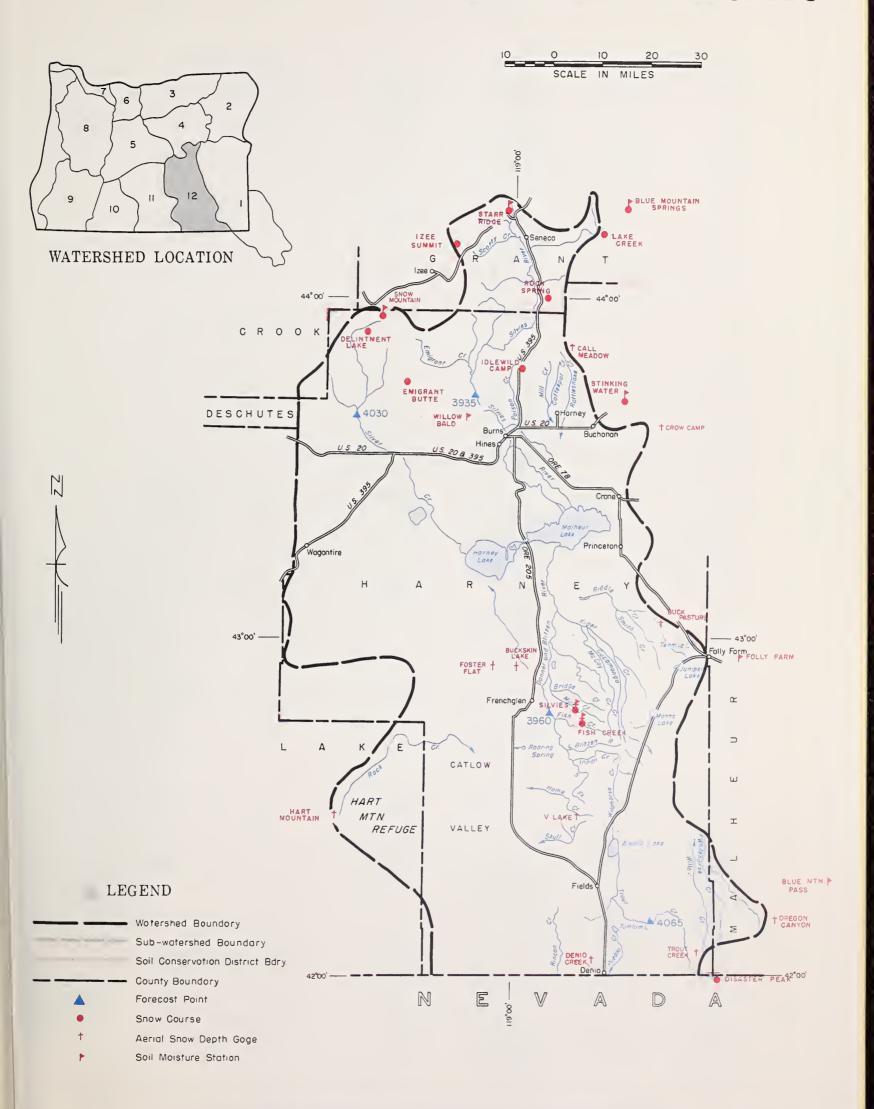
NO.	FORECAST POINT	FORECAST THIS YEAR	FORECAST PERIOD	1943-57 AVERAGE	THIS YEAR AS PERCENT OF AVERAGE
3960 4030 3935 4065	Donner und Blitzen near Frenchglen Silver near Riley Silvies near Burns Trout near Denio	57 47 20 75 74 7.4 6.8	April-Sept. April-June April-July April-Sept. April-June April-Sept. April-July	67 55 26 107 103 9.2 8.5	85 86 77 70 72 80 80

SOIL MOISTURE		PROFILE	PROFILE (Inches)		SOIL MOISTURE (Inches)		
STATION		DEPTH CAPACITY	DATE	THIS	LAST	2 YEARS	
. NAME	ELEVATION	DEPIR	DALACITI	JA12	YEAR	YEAR	AGO
Blue Mountain Springs	5900	42	16.9	5-27-63	14.3	13.8	13.4
Fish Creek	7600	48	15.0	3-26-63	12.3j	8.9	
Folly Farm	4450	36	12.5	3-28-63	9 . 9 <i>j</i>	11.6	
Silvies	6900	48	16.4	3-26-63	13.1^{j}	12.9	
Snow Mountain	6300	48	16.7	3-25-63	14.9^{j}	15.0	
Starr Ridge	5150	36	10.6	5-27-63	10.3.	10.4	10.1
Stinking Water	4800	48	21.9	3-28-63	21.5 ^{<i>J</i>}	21.9	
Willow-Bald	5000	24	6.6	3-25-63	6.2 ^j	4.0	
	1	I					1

NOTE: The soil moisture figures published herein are <u>not</u> comparable to those published last year and earlier due to a change in the scale of evaluation. The new figures represent total moisture in the soil rather than moisture available to plants.

(a) Assuming normal meteorological conditions. (b) 1943-57, 15 year period. (c) Not scheduled. (d) Corrected to natural flow. (e) Aerial snow depth gage; water content estimated. (f) Report delayed. (g) Not surveyed. (h) Partly estimated. (i) No Fall measurement. (j) Nearest current data. (k) 2 miles south of regular course. (*) 1943-57 Adjusted average. (**) Average for 5 or more years in base period.

HARNEY BASIN WATERSHEDS



Harney Basin Watersheds

PREVIOUSLY UNPUBLISHED OREGON SNOW SURVEY DATA 1962-63 Season

SNOW COURSE Name	No.	Date	Depth (In.)	Water (In.)
Cascade Summit	22F3	1/14/63 2/13/63 3/13/63 4/12/63	13 15* 16* 22	5.4 6.2 4.8 9.3
Champion	22F9	1/14/63 2/15/63 3/13/63 4/15/63	2 0 8 34	0.2 0.0 1.0 10.5
Clear Creek Dam	21D27	1/15/63	T	Т
Cooper Spur	21D25	11/1/62 11/15/62 11/30/62 12/17/62 1/15/63 2/15/63	0 T T 4 T	0.0 T T 1.4 T 0.0
Detroit Town	22E1	1/14/63 2/12/63 3/13/63 4/11/63	T 0 0 0	T 0.0 0.0 0.0
Detroit Dam	22E2	1/14/63 2/12/63 3/13/63 4/11/63	T 0 0 0	T 0.0 0.0 0.0
Golden Curry Creek	22F10	1/14/63 2/15/63 3/14/63 4/15/63	T 0 3 4	T 0.0 0.4 0.4
Goodrich Lake	18E6	4/9/63	78	26.9
Hogg Pass	21E6	1/14/63 2/12/63 3/13/63 4/11/63	14 18 27 50	4.6 7.4 9.5 20.2
Lake of the Woods	22G15	3/15/63 4/15/63	5 9	1.6
Layng Creek R. S.	22F13	1/14/63 2/15/63 3/14/63 4/15/63	0 0 0	0.0 0.0 0.0

SNOW COURSE Name	No.	Date	Depth (In.)	Water (In.)
Lund Park	22F12	1/14/63 2/15/63 3/14/63 4/15/63	0 0 0 T	0.0 0.0 0.0
Marion Forks	21E4	1/14/63 2/12/63 3/13/63 4/11/63	2 0 T T	0.2 0.0 T T
McCredie Springs	22F6	1/14/63 2/13/63 3/13/63 4/12/63	0 0 0 0	0.0 0.0 0.0
Meridian Dam	2 2F8	1/14/63 2/13/63 3/13/63 4/12/63	0 0 0 0	0.0 0.0 0.0
Mill City	22E3	1/14/63 2/12/63 3/13/63 4/11/63	T 0 0 0	T 0.0 0.0 0.0
Oakridge	22F7	1/14/63 2/13/63 3/13/63 4/12/63	0 0 0 0	0.0 0.0 0.0
Parkdale	21D23	11/1/62 11/15/62 11/30/62 12/14/62 1/15/63 2/15/63	0 0 T 0 0	0.0 0.0 T 0.0 0.0
Pinnacle Ridge	21D29	1/15/63	Т	T
Quartz Mountain	20G6	1/14/63 2/15/63 3/18/63 4/15/63	0 0 6 4	0.0 0.0 1.2 0.6
Quartz Mtn. (PP&L)	9	1/14/63 2/15/63 3/18/63 4/15/63	0 0 8 4	0.0 0.0 1.6 0.6
Railroad Overpass	22F5	1/14/63 2/13/63 3/13/63 4/12/63	0 0 0 0	0.0 0.0 0.0 0.0

SNOW COURSE Name	No.	Date	Depth (In.)	Water (In.)
Salt Creek Falls	22F4	1/14/63 2/13/63 3/13/63 4/12/63	T 0 7 T	T 0.0 1.5 T
Santiam Junction	21E5	1/14/63 2/12/63 3/13/63 4/11/63	1 0 4 11	0.2 0.0 0.8 4.6
Siskiyou Summit	22G2O	1/14/63 2/15/63 3/14/63 4/13/63	0 0 6 0	0.0 0.0 0.5 0.0
Switchback	21D28	1/15/63	T	Т
Upper Valley	21D24	11/1/62 11/15/62 11/30/62 12/14/62 1/14/63 2/15/63	0 0 T 0 0	0.0 0.0 T 0.0 0.0
Weaver Creek	22F11	1/14/63 2/15/63 3/14/63 4/15/63	0 0 T 3	0.0 0.0 T 0.3
Whitewater Bridge	21E3	1/14/63 2/12/63 3/13/63 4/11/63	T 0 0 0	T 0.0 0.0

ERRATA: 1963 SNOW MEASUREMENTS PUBLISHED IN ERROR

	Date	Depth (In.)	Water (In.)
Bald Mountain (Nev.) 19H1	0.100.100	0.17	5 .4
Previously Published	2/26/63	27	9.4
Correct Data	3/1/63	0	0.0
Beaver Reservoir 18D9			
Previously Published	12/28/62	6	1.3
Correct Data	12/28/62	6	1.4
Previously Published	3/28/63	17	7.2
Correct Data	3/28/63	17	7.3

ERRATA: 1963 SOIL MOISTURE MEASUREMENTS PUBLISHED IN ERROR

	Capacity	Date	This Year
Battle Mountain Summit 18D12 Previously Published Correct Data	16.8 13.8	12/28/62 12/20/62	11.9 11.7
Quartz Mountain 20G6 Previously Published Correct Data		3/29/63 3/29/63	10.9 7.2

LOCATION ELEV.	NUMBER NAME LOCATION SEC. TRP. ROE.	ELEV. NUMBER NAME	LOCATION ELEV. NUMBER	NAME LOCATION ELEV.	NUMBER	
OWYHEE, MALHEUR WATERSHEDS (I) Owyhee River Owyhee River Itel Antelope Ridge (Ida) 32 SS IW 5900 Inch Rettle Creek (Nev) 31 Lón 58E 7500 Inch Rettle Creek (Nev) 31 Lón 58E 7500 Inch Rettle Creek (Nev) 31 Lón 58E 7500 Inch Rettle Creek (Nev) 32 Lón 58E 6700 Inch Rettle Creek (Nev) 32 Lón 58E 6700 Inch Rettle Rend (Nev) 33 Lón 58E 6700 Inch Rettle Rend (Nev) 33 Lón 58E 6500 Inch Rettle Rend (Nev) 33 Lón 58E 6500 Inch Rettle Rend (Nev) 33 Lón 58E 6600 Inch Rettle Rend (Nev) 33 Lón 58E 6600 Inch Rettle Rend (Nev) 33 Lón 58E 6600 Inch Rend Rend (Nev) 33 Lón 58E 6600 Inch Rend Rend (Nev) 33 Lón 58E 6600 Inch Rend Rend (Nev) 31 Lón 58E 6600 Inch Rend Rend (Nev) 31 Lón 58E 6600 Inch Rend Rend (Nev) 32 Lón 53E 6800 Inch Rend Rend (Nev) 22 Lón 53E 6800 Inch Rend Rend Rend (Nev) 22 Lón 53E 6800 Inch Rend Rend Rend (Nev) 22 Lón 53E 6800 Inch Rend Rend Rend Rend Rend Rend Rend Rend	18GIMA Silvies 35 32\$ 324E 16G1 South Mountain No.2(Ida) 35 78 5W	STATE POWDER, PINE, GRANDE RON Surnt Rive	17D10a 18D9 18D8 18D6 18D7 17D13a 17D7 18D3M 18D7 17D15 18D3M 18D7 17D15 18D3M 18D7 17D14 18D7 17D15 18D3M 18D7 17D15 18D3M 18D7 17D16 17D7 18D3M 18D7 17D16 17D7 18D3M 18D7 17D16 17D1	Sic. Tet. Sec.	18E1 19D2 18D12M 19E2M 18E16M 18E13M 19E3M 18E27a 18E8 18E24a 19E9 18D6 20E1M 20E2 18E7 18D7 19F1M 19E7H 18E9 18E25M	UPPER JOHN DAY WAT Upper John Day Anthony Lake Arbuckle Mountain Summit Seech Creek Summit Blue Mountain Spring Blue Mountain Spring Blue Mountain Spring Blue Mountain Spring Cold Center Indian Cr. Butte Izee Summit Lucky Strike Marks Creek Ochoco Meadows Olive Lake Schoolmarm Snow Mountain Starr Ridge Tipton Williams Ranch UPPER DESCHUTES, CROOK Upper Deschute Black Pine Spring Caldwell Ranch Cascade Summit Charlton Lake Chemult
CLATSOP CLATSOP COLVADIA PORTL TAMMILL LINGON LINGON REPAIN ENGRA 2272	Throwal Since Si	180 180	77015 0000000000000000000000000000000000	Tollgate Willow Creek Arbuckle Mountain 33 4S 29E 5400 D 20 4D 6D 45° SCALE IN MILES LEGEND Wotershed Boundary Sub-watershed Boundary Snow Course PPB L Snow Station 43' 15H4 15H8 15H8 115' 14	21F11 21F14 21F6 21F4 21F6 21F7 21F10 21F19 21F13 21F15 21F13 22F2 22F14 22F15 19E3M 20E1M 20E2 19F1M 19E4 21D5 21D25 21D20 21D21	Fire Road Hogg Pass Hungry Flat Irish-Taylor Mowich New Crescent Lake New Dutchman Flat #2 Paulina Lake Paulina Lake Paulina Trairie Tangent Three Creek Neadows Waldo Lake Willamette Pass Windigo Pass Crooked Riv Derr Marks Creek Ochoco Meadows Snow Mountain Tamarack HOOD, MILE C LOWER DESCHUTES W Hood Riv Brooks Meadows

MBER	HAME	LOCA	TEP.	9 G [,	L€¥.
	UPPER JOHN DAY WATE				
811	Upper John Day R Anthony Lake Arbuckle Mountain Battle Mountain Summit Seech Creek Summit Blue Mountain Spring Blue Mountain Spring Blue Mountain Summit Derr East Fork Canyon Cold Center Indian Cr. Butte Izee Summit Lucky Strike Marks Creek Ochoco Meadows Olive Lake Schoolmarm Snow Mountain Starr Ridge Tipton Williams Ranch	18	75	378	7125
19D2 18D12M	Rattle Mountain Summit	33	45 35	29E :	5400 7370
9E2M	Seech Creek Summit	4	128	30E	4800
8E16M	Blue Mountain Spring	21	158	35E	5900
I GESM I GETSW	Blue Mountain Summit	1/	125	30E 23E	5098 5620
18E27a	East Fork Canyon	15	15S	32E	5700
18E8	Cold Center	21	98	36E	5340
18E24a 19E9	Indian Cr. Butte	5	155	33E	6550
18D6	Lucky Strike	28	38	32E	5050
MIBOS	Marks Creek	25	12S	19E	4540
2012 18E7	Oliva Laka	21	138	20E	5200
18D7	Schoolmarm	28	4S	348	4775
19F1M	Snow Mountain	1	198	26E	6300
18E9	Starr Ridge Tipton	20	108	31%	5150 5100
18E25M	Williams Ranch	20	158	32 E	4500
U	PPER DESCHUTES, CROOKE	D WAT	ERSH E	D\$ (5)	1
	Upper Deschutes	River	-		
21E11	Black Pine Spring	14	165	9E	4600
22F3	Cascade Summit.	7	235	46 36	4400
21F7	Charlton Lake	23	215	6E	5750
21F11	Chemult	21	275	8E	4760
21E6	Hogg Pass	27 27	135	74E	4755
21F4	Hungry Flat	30	188	118	4400
21F6	Irish-Taylor	25	20S	6E	5500
21F10	New Crescent Lake	29	255	25E	4700 4800
21F19	New Dutchman Flat #2	21	18\$	9E	6400
21F13	Paulina Lake	34	215	128	6330
21F3	Tangent	28	188	TIE	5400
21E15	Three Creeks Butte	27	165	9E	5200
21El3	Three Creek Meadows	3	175	9E	5600
22F2 22F17	Waldo Lake .	15	21S 27S	6B 51r	5500 5600
22F15	Upper Deschutes Black Pine Spring Caldwell Ranch Cascade Summit Charlton Lake Chemult Fire Road Hogg Pass Hungry Flat Irish-Taylor Mowich New Crescent Lake New Dutchman Flat #2 Paulina Lake Paulina Prairie Tangent Three Creeks Butte Three Creek Butte Three Creek Meadows Waldo Lake Willamette Pass Windigo Pass Crooked Rive	20	258	6E	5800
		г			
19E3M	Derr Marks Creek Ochoco Meadows Snow Mountain Tamarack	14	138	23E	5670 4540
20E2	Ochoco Meadous	21	135	20E	5200
19F1M	Snow Mountain	1	198	2óE	5200 6300
19E4	Tamarack	8	15S	25E	4800
	HOOD, MILE CR LOWER DESCHUTES WA	EEKS TERSHE	DS (6	1	
	Hood River				
21D5	Brooks Meadows Cooper Spur Creenpoint Reservoir Knebal Springs Parkdale	2	2S	108	4300
21D25M	Cooper Spur	20	25	101	3490
21D20	Knebal Springs	31	18	116	3850
21D23	Parkdale	6	18	108	1770
21D8	LUTOX LOTUC	6 21	~		5600 4400
21D4 21D9	Red Hill Still Creek	25		8 E	3700
2107	Tilly Jame	15	2S	9B	6000
21D21	Ulrich Ranch Junction	28 20		11B	
21D24	Upper Valley Mile Creeks - Mo				
21.06	Brooks Meadows	2			4300
2106	Knebal Springs	31	15	118	3850
21D21	Ulrich Ranch Junction	28	15	11E	3350
	Lower Deschutes				
21012	Clear Lake	29 24			3500 E 4755
21E6	Hogg Pass				- 4())
	LOWER COLUMBIA WA		ED\$ t	71	
0154	Sandy Rive	r 6	38	Q1	5600
21D8 21D9	Phlox Point Still Creek	25			E 3700
,,,,,	WILLAMETTE WATE	RSHED	5 (8)		
	Clockamas Ri				
	Clockamas Ki				2118

13 16S 7E 3800 24 16S 6E 1956 35 15S 7½E 4800 13 16S 5E 1372 28 16S 2E 800 15 16S 7E 2800

HAME LOCATION ELEV. SEC. TOP. AGE.	REPHUN	HAME LOCATION ELEV. SEC. For , eq.(NUMBER NAME LOCATION ELEV.
UPPER JOHN DAY WATERSHEDS (4)		Middle Fork Willamette River	SEC.) Ter. Gos.
Upper John Day River	22F3	Cascade Summit 7 23S 6E 4880	Pacific Pawer and Light Company's Snow Stations
Anthony Lake 18 7S 378 7125	22F6 22F8	McCredie Springs 26 21S 4E 2120 Meridian Dam 13 19S 1W 750	1 Beatty (PP&L) 22 36S 12E /300
Arbuckle Mountain 33 4S 29E 5400 Battle Mountain Summit 29 3S 31E 4340	22F7	Oskridge 16 21S 3E 1310	10 81y 101 Ranch (PP&L) 22 35S 14E 4800
Seech Creek Summit 4 12S 30E 4800	22F5 22F4	Railroad Overpass 27 22S 5E 2750 Salt Creek Falls 33 22S 6E 4000	4 Crystal (PP&L) 26 34S 6E 4200
Blue Mountain Spring 21 15S 35E 5900 Blue Mountain Summit 6 12S 36E 5098	22F2 22F14	Waldo Lake 15 21S 6E 5500	5 Fort Klamath (PP&L) 22 33S 7½E £150 6 Kirk (PP&L) 1 33S 7E £4533
Derr 14 13S 23B 5670	221 14	Willamette Pass 33 24S 5½E 5600	9 Quartz Mountain (PP&L) 33 37S 16E 5504
East Fork Canyon 15 158 32E 5700 Cold Center 21 98 36E 5340	22F9	Coast Fork Willamette River Champion 12 23S 1E 4500	8 Tomahawk Ski Bowl (PP&L) 3 36S 6E 4200 12 Yamsey (PP&L) 20 31S 11E 4600
Indian Cr. Butte 5 15S 33E 6550 Izee Summit 28 16S 29E 5293	22F10	Golden Curry Creek 1 23S 1E 3136	LAKE COUNTY, GOOSE LAKE WATERSHEDS (11)
Lucky Strike 28 3S 32E 5050	22F13 22F12	Layng Creek R. S. 31 21S 1E 1200 Lund Park. 22 22S 1E 1740	Gaose Lake
Marks Creek 25 12S 19E 4540 Ochoco Meadows 21 13S 20E 5200	22F11	Weaver Creek 35 22S 1E 2440	20015a Bear Flat Meadow 27 36S 19E 5900
Olive Lake 14 9S 33½E 6000		Mary¹s River	20G8M Camas Creek 5 39S 21E 5720
Schoolmarm 28 4S 34E 4775 Snow Mountain 1 19S 26E 6300	23E1	Mary's Peak 21 12S 7W 3620	20C16a Crane Mountain 13 40S 21E 6020
Starr Ridge 20 15S 31E 5150 Tipton 34 10S 35½E 5100		ROGUE, UMPOUA WATERSHEDS (9)	20H2a Crowder Flat (Cal) 30 47H 11E 5200 20H3a Dismal Swamp (Cal) 31 48H 16E 7000
Williams Ranch 20 15S 32B 4500		Rogue River	20017a Patton Meadow 28 38S 18E 6800
UPPER DESCHUTES, CROOKED WATERSHEDS (5)	2304 2206	Althouse 17 41S 7W 4530 Annie Spring 19 31S 6E 6018	2006M Quartz Mountain 2 38S 16E 5320 20Hla State Line (Cal) 21 48N 11E 5750
Upper Deschutes River	22G28	Beaver Dam Creek 1 38S 4E 5100	20G9A Strawberry 4 40S 16E 5600
Black Pine Spring 14 16S 9E 4600	22021 22013	Big Red Mountain 31 40S 1W 6500 Billie Creek Divide 30 36S 5E 5300	Abert Lake
Caldwell Ranch 30 21S 8E 4400 Cascade Summit 7 23S 6E 4880	22C27 22F19	Deadwood Junction 8 38S 4E 4600	20015a Bear Flat Meadow 27 36S 19E 5900 20011a Cox Flat 16 37S 18E 5750
Charlton Lake 23 21S 6E 5750	22014	Diamond-Cratar Summit 34 28S 6E 5800 Fish Lake 3 37S 4E 4865	20014a Finley Corrals 11 36S 16E 6000
Chemult 21 27S 8B 4760 Fire Road 36 21S 11E 5050	22C12 23C3	Fourmile Lake 9 36S 5E 6000 Crayback Peak 9 40S 5W 6000	2006M Quartz Mountain 2 38S 16E 5320
Hogg Pass 24 13S 7½E 4755	22017	Hobart Lake 17 40S 3E 5010	20G10a Sherman Valley 15 37S 21E 6600
Hungry Flat 30 18S 11E 4400 Irish-Taylor 25 20S 6E 5500	22C26 22C16	Howard Prairie 32 38S 4E 4500 Hyatt Prairie Reservoir 15 39S 3E 4900	Summer Lake
Mowich 29 25S 25E 4700	22G22	Little Red Mountain 25 40S 2W 6500	2002A Summer Rim 15 33S 16E 7200
New Dutchman Flat #2 21 185 9E 6400	2305 22G5	Page Mountain 8 41S 7W 4045 Park Headquarters 8 31S 6E 6450	Silver Lake 21F12 Silver Creek 25 & 26 29S 13E 4900
Paulina Lake 34 218 12E 6330 Paulina Prairie 28 218 11E 4285	22C29 22C10	Rye Spring Spur 33 36S 4E 5000 Seven Lakes No. 1 3 34S 5E 6800	20C13a Sycan Flat 25 21S 14E 5500
Tangent 28 18S 10E 5400	22011	Seven Lakes No. 2 26 33S 5E 6200	Warner Lake
Three Creeks Butte 27 16S 9E 5200 Three Creek Meadows 3 17S 9E 5600	22C2 22C2O	Silver Burn 30 30S 4E 3720 Siskiyou Summit 17 40S 2E 4630	2008M Camas Creek 5 39S 21E 5720 20016a Crane Mountain 13 40S 21E 6020
Waldo Lake · 15 21S 6E 5500	2269	South Fork Canal 12 33S 3E 3500	20H3a Dismal Swamp (Cal) 31 48N 22E 7000
Willamette Pass 33 24S 5½E 5600 Windigo Pass 20 25S 6E 5800	22C18 22C1	Wagner Butte 1 40S 1W 6900 Whaleback 3 31S 2E 5140	19Cla Hart Mountain 1 36S 25E 6350 20ClOa Sherman Valley 15 37S 21E 6600
Craoked River		Umpqua River	Guano Lake
Derr 14 13S 23E 5670	22F9	Champion 12 23S 1E 4500	19H1 Bald Mountain (Nev) 17 45N 21E 6720
Marks Creek 25 12S 19E 4540 Ochoco Meadows 21 13S 20E 5200	22F18 23G7	Diamond Lake 29 27S 6E 5315 Eden Valley Summit 10 32S 10W 2390	19Gla Hart Mountain 1 36S 25E 6350 19H4a Little Bally Mt. (Nev) 8 45N 19E 6600
Snow Mountain 1 198 26E 6300	22F16 22F23	North Umpqua 19 26S 6E 4215 Red Butte No. 1 36 27S 2W 4560	2/1400 22422 2022 1144 (1017) 2 271 271
Tamarack 8 15S 25E 4800	22F24	Red Butte No. 2 30 27S 1W 4000	HARNEY BASIN WATERSHED (12)
HOOD, MILE CREEKS	22F25 22F26	Red Butte No. 3 30 27S 1W 3500 Red Butte No. 4 36 27S 1W 3000	Silvies River - Silver Creek 18F7a Call Mandows 29 20S 33E 5340
LOWER DESCHUTES WATERSHEDS (6)	22F27	Red Butte No. 5 20 27S 1W 2500	19F2 Delintment Lake 28 19S 26E 5600
Hood River	22F28 22F17	Trap Creek 1 275 4E 3800	19F3 Emigrant Butte 14 21S 27E 5000 18F3 Idlewild Camp 27 20S 31E 5200
Brooks Meadows 2 2S 10E 4300 Cooper Spur 6 2S 10F 3490	2201	Whaleback 3 31S 2E 5140	19E9 Izee Summit 28 16S 29E 5293
Greenpoint Reservoir 28 2N 9E 3400	22225	Hinding Page 20 250 6F 5900	
	22F15	Windigo Pass 20 25S 6E 5800	18F1 Rock Spring 23 18S 32E 5100 19F1M Snow Mountain 1 19S 26E 6300
Knebal Springs 31 1S 11E 3850 Parkdale 6 1S 10E 1770	22F15	KLAMATH WATERSHEDS (10)	18F1 Rock Spring 23 18S 32E 5100 19F1M Snow Mountain 1 19S 26E 6300 19F7M Starr Ridge 20 15S 31E 5150
Knebal Springs 31 1S 11E 3850 Parkdale 6 1S 10E 1770 Phlox Point 6 3S 9E 5600		KLAMATH WATERSHEDS (10) Klamath River	18F1 Rock Spring 23 18S 32E 5100 19F1M Snow Mountain 1 1 19S 26E 6300 19E7M Starr Ridge 20 15S 31E 5150
Knebal Springs 31 1S 1IE 3850 Parkdale 6 1S 10E 1770 Phlox Point 6 3S 9E 5600 Red Hill 21 1S 9E 4400 Still Creek 25 3S 8E 3700	22F15 22G6 22C13	KLAMATH WATERSHEDS (10) Klamath River Annie Spring 19 31S 6E 6018 Billie Creek Divide 30 36S 5E 5300	18F1 Rock Spring 23 188 38E 5100 19F1M Snow Mountain 1 198 26E 6300 19E7N Starr Ridge 20 158 31E 5150 18F4M Stinking Water 33 218 34E 4800 19F4m Willow-Bald 19 228 29E 5000 Danner Und Blitzen River
Knebal Springs 31 1S 11E 3850 Farkdale 6 1S 10k 1770 Phlox Point 6 3S 9E 5600 Red Hill 21 1S 9E 4400 Still Creek 25 3S 8He 3700 Tilly Jame 15 2S 9E 6000 Ulrich Ranch Junction 28 1S 11E 3350	22G6 22C13 21C5	KLAMATH WATERSHEDS (10) Klamath River Annie Spring 19 31S 6E 6018 Billie Creek Divide 30 36S 5E 5300 Bly Mountain 15 & 22 37S 11E 5090	18F1 Rock Spring 23 188 32E 5100 19F1M Snow Mountain 1 199 26E 6300 19E7M Starr Ridge 20 158 31E 5150 18F4M Stinking Water 33 218 34E 4800 19F4m Willow-Bald 19 22S 29E 5000 Danner Und Blitzen River 21 298 35E 5700 18F6a Buck Pasture 21 298 35E 5700
Knebal Springs 31 1S 1E 3850 Parkdale 6 1S 10k 1770 Phlox Point 6 3S 9E 560 Red Hill 21 1S 9E 4400 Still Creek 25 3S 8E 370 Tilly Jame 15 2S 9E 6000 Ulrich Ranch Junction 28 1S 11E 3350 Upper Valley 20 1S 10E 2530	2206 22013 2105 21F11 22024	KLAMATH WATERSHEDS (10) Klamath River Annie Spring 19 31S 6E 6018 Billie Creek Divide 30 36S 5E 5300 Bly Mountain 15 & 22 37S 11E 5090 Chemult 21 27S 8E 4760 Cold Springs Camp 12 35S 5E 6100	18F1 Rock Spring 23 188 32E 5100 19F1M Show Mountain 1 199 26E 6300 19F7M Starr Ridge 20 158 31E 5150 18F4M Stinking Water 33 218 34E 4800 19F4M Willow-Bald 19 22E 29E 5000
Knebal Springs 31 18 116 3850 Parkdale 6 18 106 1770 Phlox Point 6 38 98 5600 Red Hill 21 18 95 4,400 Still Creek 25 38 846 3700 Tilly Jame 15 28 98 6000 Ulrich Ranch Junction 28 18 118 3350 Upper Valley 20 18 106 2530 Mile Creeks - Mosier Creek	22G6 22C13 21C5 21F11 22C24 20C12a	KLAMATH WATERSHEDS (10) Klamath River Annie Spring 19 31S 6E 6018 Billie Creek Divide 30 36S 5E 5300 Bly Nountain 15 & 22 37S 11E 5090 Chemult 21 27S 8E 4760 Cold Springs Camp 12 35S 5E 6100 Crazyman Flat 9 34S 15E 6100 Crowder Flat (Cal) 30 47N 11E 5200	18F1 Rock Spring 23 188 382 5100 19F1M Show Mountain 1 198 26E 6300 19E7M Starr Ridge 20 188 31E 5150 18F4M Stinking Water 33 218 34E 4800 19F4m Willow-Bald 19 228 29E 5000
Rnebal Springs 31 15 116 3850 Parkdale	22G6 22Cl3 21C5 21F11 22C24 20Cl2a 20H2a 22F19	KLAMATH WATERSHEDS (10) Klamath River Annie Spring 19 31S 6E 6018 Billie Creek Divide 30 36S 5E 5300 Bly Mountain 15 & 22 37S 11E 5090 Chemult 21 27S 8E 4760 Cold Springs Camp 12 35S 5E 6100 Crazyman Flat 9 34S 15E 6100 Crowder Flat (Cal) 30 47N 11E 5200 Diamond-Cratar Summit 34 28S 6E 5800	18F1 Rock Spring 23 188 32E 5100 19F1M Snow Mountain 1 199 26E 6300 19F7M Starr Eddge 20 15S 31E 5150 18F4M Stinking Water 33 21S 34E 4800 19F4m Willow-Bald 19 22S 29E 5000
Knebal Springs 31 18 116 3850 Parkdale 6 18 106 1770 Phlox Point 6 38 98 5600 Red Hill 21 18 95 4,400 Still Creek 25 38 846 3700 Tilly Jame 15 28 98 6000 Ulrich Ranch Junction 28 18 118 3350 Upper Valley 20 18 106 2530 Mile Creeks - Mosier Creek	2206 22013 2105 21F11 22024 20012a 2012a	KLAMATH WATERSHEDS (10) Klamath River	18F1 Rock Spring 23 188 32E 5100 19F1M Snow Mountain 1 199 26E 6300 19F7M Starr Ridge 20 158 31E 5150 18F4M Stinking Mater 33 218 34E 4800 19F4M Willow-Bald 19 22E 29E 5000
Rnebal Springs 31	22G6 22Cl3 21C5 21F11 22C24 20Cl2a 20H2a 22F19 21F18 21C6a 20Cl4a	KLAMATH WATERSHEDS (10) Klamath River	18F1 Rock Spring 23 188 32E 5100 19F1M Snow Mountain 1 199 26E 6300 19F7M Starr Ridge 20 158 31E 5150 18F4M Stinking Mater 33 218 34E 4800 19F4M Willow-Bald 19 22E 29E 5000
Rnebal Springs 31	22G6 22Cl3 21C5 21F11 22C24 20Cl2a 20R2a 22F19 21F18 21C6a 20Cl4a 22Cl2	KLAMATH WATERSHEDS 100	BRI Rock Spring 23 188 32E 5100 19F1M Snow Mountain 1 199 26E 6300 19F7M Starr Ridge 20 158 31E 5150 18F4M Stinking Water 33 218 34E 4800 19F4m Willow-Bald 19 22E 29E 5000
Rnebal Springs 31	2206 22013 2105 21F11 22024 20f12a 20f12a 21F18 2106a 20014a 22C12 2104 22C16	KLAMATH WATERSHEDS (10) Klamath River	18F1 Rock Spring 23 188 382 5100 19F1M Snow Mountain 1 199 266 6300 19F7M Starr Ridge 20 158 31E 5150 18F4M Stinking Water 33 218 34E 4800 19F4M Willow-Bald 19 225 29E 5000
Rnebal Springs 31	22G6 22Cl3 21C5 21F11 22C24 20Cl2a 20R2a 22F19 21F18 21C6a 20Cl4a 22Cl2 21C4 22Cl6 22Cl6	KLAMATH WATERSHEDS (10) Klamath River	18F1
Rnebal Springs 31 15 116 3850 Parkdale	2206 22013 2105 21F11 22024 20012a 22F19 21F18 2106a 20014a 22C12 2014 22C12	KLAMATH WATERSHEDS (10) Klamath River	BET Rock Spring 23 188 32E 5100 19F1M Snow Mountain 1 199 26E 6300 19F7M Starr Ridge 20 158 31E 5150 18F4M Stinking Water 33 215 34E 4800 19F4M Willow-Bald 19 225 29E 5000
Rnebal Springs 31 15 116 3850 Parkdale 6 18 106 1770 Phlox Point 6 38 98 5600 Red Hill 21 18 95 4400 Still Creek 25 38 815 3700 Tilly Jame 15 28 98 6000 Ulrich Ranch Junction 28 18 118 3350 Upper Valley 20 18 106 2530 Mile Creeks - Mosier Creek Brooks Meadows 2 28 106 4300 Knebal Springs 31 18 118 3850 Ulrich Ranch Junction 28 18 115 3350 Lower Deschutes River Clear Lake 29 48 98 3500 Lower Columbia Watersheds 71 Sondy River Phlox Point 6 38 98 5600 Alto 2001	2206 22013 2105 21F11 22024 20012a 2012a 2012a 2014a 2106a 20114a 22016 22026 22015 2205 22025	KLAMATH WATERSHEDS (10) Klamath River	BRI Rock Spring 23 188 32E 5100 19F1M Snow Mountain 1 199 26E 6300 19F7M Starr Ridge 20 158 31E 5150 18F4M Stinking Water 33 213 34E 4800 19F4M Willow-Bald 19 22S 29E 5000
Rnebal Springs 31 15 116 3850 Parkdale 6 15 106 1770 Phlox Point 6 35 98 5600 Red Hill 21 15 95 4400 Still Creek 25 38 8½ 5700 Red Hill 21 15 95 4400 Still Creek 25 38 8½ 5700 Red Hill 21 15 95 4400 Still Creek 25 38 8½ 5700 Red Hill 21 15 95 4400 Still Creek 25 30 30 Red Hill 21 15 95 4400 Still Creek 25 38 30 Red Hill 21 32 32 Red Hill 3350 Red Hill	2206 22013 2105 21F11 22024 20012a 22F19 21F18 2106a 20014a 22C12 2104 22C16 22C26 22C15 22C5 20C6M 22C10 22C11	KLAMATH WATERSHEDS (10) Klamath River	18F1
Rnebal Springs 31	2206 22013 2105 21F11 22024 20012a 20112a 21F18 2106a 20014a 22012 2104 22016 22026 22015 22025 22025 22025 22025 22006M 22010 22011 20014a	KLAMATH WATERSHEDS (10) Klamath River	18F1
Rnebal Springs 31	2206 220.3 2105 21F11 22024 20612a 2062a 22F19 21F18 2106a 20614a 22C12 2104 22C26 22C15 22C25 22C25 20C6M 22G10 22C11 20H1a 2009A	KLAMATH WATERSHEDS (10) Klamath River	BEFI Rock Spring 23 188 32E 5100 19F1M Snow Mountain 1 199 26E 6300 19F7M Starr Ridge 20 158 31E 5150 18F4M Stinking Water 33 215 34E 4800 19F4M Willow-Bald 19 225 29E 5000
Rnebal Springs 31	2206 22013 2105 21F11 22024 20012a 20179 21F18 2106a 20014a 22012 2016 22026 22015 2205 22025 2006M 22010 2011 2011a 2011a 2012a	KLAMATH WATERSHEDS (101) Klamath River	ABRI Rock Spring 23 188 32E 5100 19F1M Snow Mountain 1 199 26E 6300 19F7M Starr Ridge 20 158 31E 5150 18F4M Stinking Mater 33 218 34E 4800 19F4M Millow-Bald 19 22E 29E 5000
Rnebal Springs 31	2206 22013 2105 21F11 22024 20012a 20112a 21F18 2106a 20014a 22014 22016 22026 22015 22025 2006M 22010 22011 20011a 2009A 2002A 2002A 2002A	KLAMATH WATERSHEDS (10) Klamath River	ABFI Rock Spring 23 188 32E 5100 19F1M Show Mountain 1 199 26E 6300 19F7M Starr Ridge 20 158 31E 5150 18F4M Stinking Mater 33 218 34E 4800 19F4M Willow-Bald 19 22E 29E 5000
Rnebal Springs 31	2206 22013 2105 21F11 22024 20012a 20179 21F18 2106a 20014a 22012 2016 22026 22015 2205 22025 2006M 22010 2011 2011a 2011a 2012a	KLAMATH WATERSHEDS (101) Klamath River	ABFI Rock Spring 23 188 32E 5100 19F1M Show Mountain 1 199 26E 6300 19F7M Starr Ridge 20 158 31E 5150 18F4M Stinking Mater 33 218 34E 4800 19F4M Willow-Bald 19 22E 29E 5000
Rnebal Springs 31	2206 22013 2105 21F11 22024 20012a 20179 21F18 2106a 20014a 22012 2016 22026 22015 2205 22025 2006M 22010 2011 2011a 2011a 2012a	KLAMATH WATERSHEDS (101) Klamath River	ABFI Rock Spring 23 188 32E 5100 19F1M Show Mountain 1 199 26E 6300 19F7M Starr Ridge 20 158 31E 5150 18F4M Stinking Mater 33 218 34E 4800 19F4M Willow-Bald 19 22E 29E 5000
Rnebal Springs	2206 22013 2105 21F11 22024 20012a 20179 21F18 2106a 20014a 22012 2016 22026 22015 2205 22025 2006M 22010 2011 2011a 2011a 2012a	KLAMATH WATERSHEDS (101) Klamath River	ABFI Rock Spring 23 188 32E 5100 19F1M Show Mountain 1 199 26E 6300 19F7M Starr Ridge 20 158 31E 5150 18F4M Stinking Mater 33 218 34E 4800 19F4M Willow-Bald 19 22E 29E 5000
Rnebal Springs	2206 22013 2105 21F11 22024 20012a 20179 21F18 2106a 20014a 22012 2016 22026 22015 2205 22025 2006M 22010 2011 2011a 2011a 2012a	KLAMATH WATERSHEDS (101) Klamath River	ABFI Rock Spring 23 188 32E 5100 19F1M Show Mountain 1 199 26E 6300 19F7M Starr Ridge 20 158 31E 5150 18F4M Stinking Mater 33 218 34E 4800 19F4M Willow-Bald 19 22E 29E 5000
Rnebal Springs 31	2206 22013 2105 21F11 22024 20012a 20179 21F18 2106a 20014a 22012 2016 22026 22015 2205 22025 2006M 22010 2011 2011a 2011a 2012a	KLAMATH WATERSHEDS (101) Klamath River	ABFI Rock Spring 23 188 32E 5100 19F1M Show Mountain 1 199 26E 6300 19F7M Starr Ridge 20 158 31E 5150 18F4M Stinking Mater 33 218 34E 4800 19F4M Willow-Bald 19 22E 29E 5000
Rnebal Springs 31	2206 22013 2105 21F11 22024 20012a 20179 21F18 2106a 20014a 22012 2016 22026 22015 2205 22025 2006M 22010 2011 2011a 2011a 2012a	KLAMATH WATERSHEDS (101) Klamath River	18F1
Rnebal Springs 31	2206 22013 2105 21F11 22024 20012a 20179 21F18 2106a 20014a 22012 2016 22026 22015 2205 22025 2006M 22010 2011 2011a 2011a 2012a	KLAMATH WATERSHEDS (101) Klamath River	18F1
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Rnebal Springs	2206 22013 2105 21F11 22024 20012a 20179 21F18 2106a 20014a 22012 2016 22026 22015 2205 22025 2006M 22010 2011 2011a 2011a 2012a	Klamath WaterSHEDS (10) Klamath River	18F1
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The Following Organizations Cooperate in the Oregon Snow Survey Work

STATE

Idaho Cooperative Snow Surveys
Nevada Cooperative Snow Surveys
Oregon State University
Oregon State Engineer and Corps of State Watermasters
Oregon State Highway Engineers
Soil Conservation Districts of Oregon

COUNTY

Douglas County Water Resources Survey FEDERAL

Department of Agriculture
Cooperative Extension Service
Forest Service
Soil Conservation Service
Department of Commerce

Weather Bureau
Department of the Interior
Bonneville Power Administration
Bureau of Land Management
Bureau of Reclamation
Fish and Wildlife Service
Geological Survey
National Park Service

Department of National Defense Corps of Army Engineers

PUBLIC UTILITIES

Pacific Power and Light Company Portland General Electric Company California-Pacific Utilities Company

MUNICIPALITIES

City of Baker City of La Grande City of The Dalles City of Walla Walla

IRRIGATION DISTRICTS

Arnold Irrigation District Associated Ditch Companies Burnt River Irrigation District Central Oregon Irrigation District East Fork Irrigation District Grants Pass Irrigation District Jordan Valley Irrigation District Lakeview Water Users, Incorporated Medford Irrigation District North Board of Control - Owyhee Project North Unit Irrigation District Ochoco Irrigation District Roque River Valley Irrigation District South Board of Control - Owyhee Project Squaw Creek Irrigation District Talent Irrigation District Tumalo Project Vale-Oregon Irrigation District Warmsprings Irrigation District

PRIVATE ORGANIZATIONS
Amalgamated Sugar Company

The Crag Rats, Hood River, Oregon

UNITED STATES DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE ROSS BLDG., 209 S.W. 5TH AVE. PORTLAND 4. OREGON

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"The Conservation of Water begins with the Snow Survey"